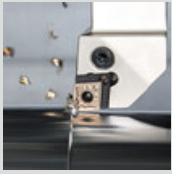


# CONTENTS

---



## General product information

[View](#)

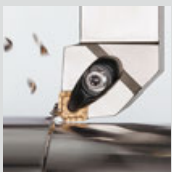
## Added products



### JPVJNR/L\*\*

Latest turning toolholders with easy insert clamping system

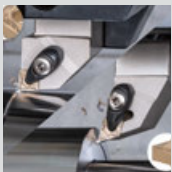
[View](#)



### NS9530/GT9530/AT9530

New grades and chipbreakers for this economical insert series

[View](#)



### GNMG/FNMG

Introducing GNMG and FNMG inserts

[View](#)



# ISO<sup>ECO</sup>TURN

Tungaloy Report No. 426-G

**Cartridge Set** allowing the use of ISO-EcoTurn insert with **no need to swap** the toolholder



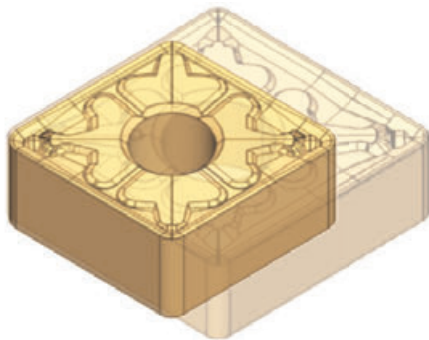


**INDUSTRY 4.0**  
*FEED the SPEED!*

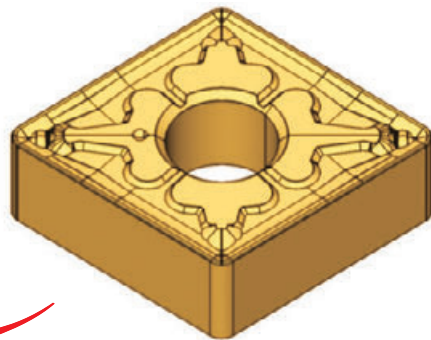


# ISO<sup>CO</sup>TURN

---



**ISO<sup>CO</sup>TURN**  
CNMG090408E type






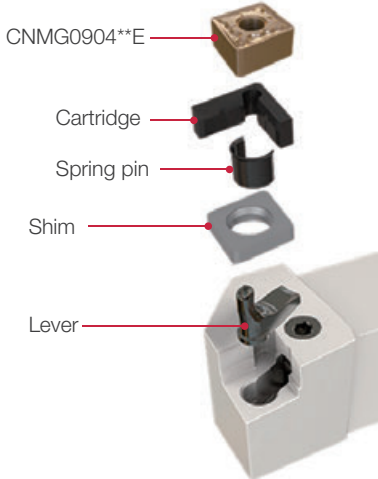
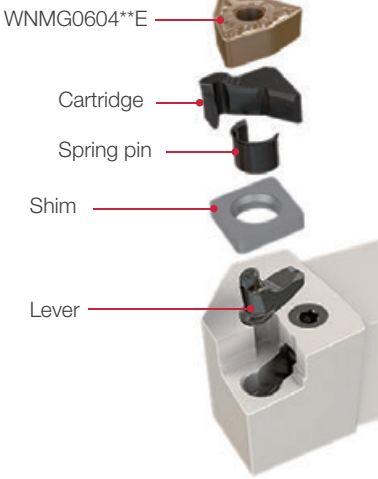
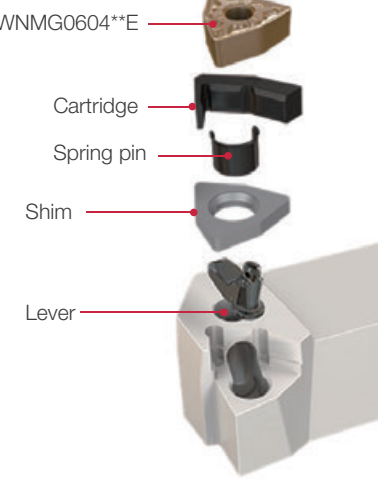
**Regular size inserts**  
CNMG120408 type



**Cost effective:**  
Identical cutting performance, only smaller

## ISO-EcoTurn Small size inserts, for an economical advantage

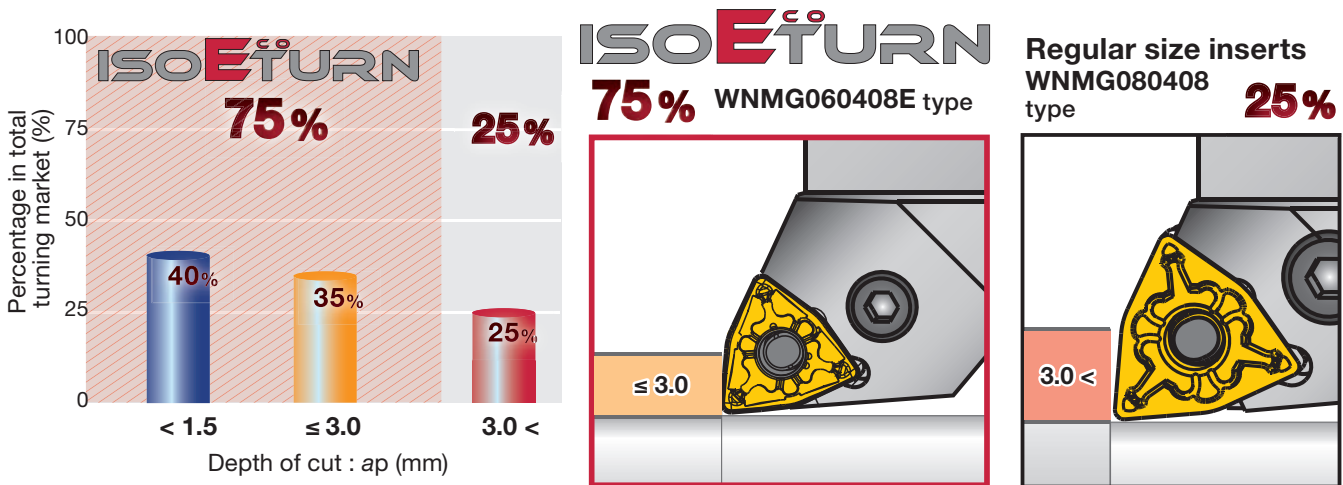
**Cartridge Set** allows more flexible use of ISO-EcoTurn inserts and the ability to use them to the full potential of cost efficiency and productivity

Applicable combination	CNMG1204... ↓ ISO-EcoTurn CNMG0904**E	CNMG1204... ↓ ISO-EcoTurn WNMG0604**E	WNMG0804... ↓ ISO-EcoTurn WNMG0604**E
Cartridge Set + ISO-EcoTurn Insert	 <span style="color: red; font-weight: bold; border: 1px solid red; border-radius: 50%; padding: 2px;">New</span>	 <span style="color: red; font-weight: bold; border: 1px solid red; border-radius: 50%; padding: 2px;">New</span>	 <span style="color: red; font-weight: bold; border: 1px solid red; border-radius: 50%; padding: 2px;">New</span>
Detail of Cartridge Set	 <p>CNMG0904**E</p> <p>Cartridge</p> <p>Spring pin</p> <p>Shim</p> <p>Lever</p>	 <p>WNMG0604**E</p> <p>Cartridge</p> <p>Spring pin</p> <p>Shim</p> <p>Lever</p>	 <p>WNMG0604**E</p> <p>Cartridge</p> <p>Spring pin</p> <p>Shim</p> <p>Lever</p>
Cartridge Set	AD-CL-4/3-SET AD-CL-4/3-SET-S	AD-CL-4/3-W-SET	AD-WL-4/3-SET
Applicable Tool holder	PCLNR/L**12	PCLNR/L**12	PWLNR/L**08

Note: How to install the cartridge set page 11. Cartridge set cannot be assembled on Tungaloy's P-style holders. This product might correspond to the Export Trade Control Order. When you export this product, you might need apply for export licenses to the authorities in your country.

Over 75%\* of the turning market only uses a depth of cut at or less than 3 mm

\* Based on Tungaloy market research.



### Chip control

ISO-EcoTurn inserts incorporate an identical chipbreaker geometry as regular size inserts providing the same chip removal at a depth of cut up to 3 mm.

Workpiece : S45C / C45  
 Cutting speed :  $V_c = 200$  m/min  
 Coolant : Wet

#### ISO EcoTurn CNMG090408E-TM

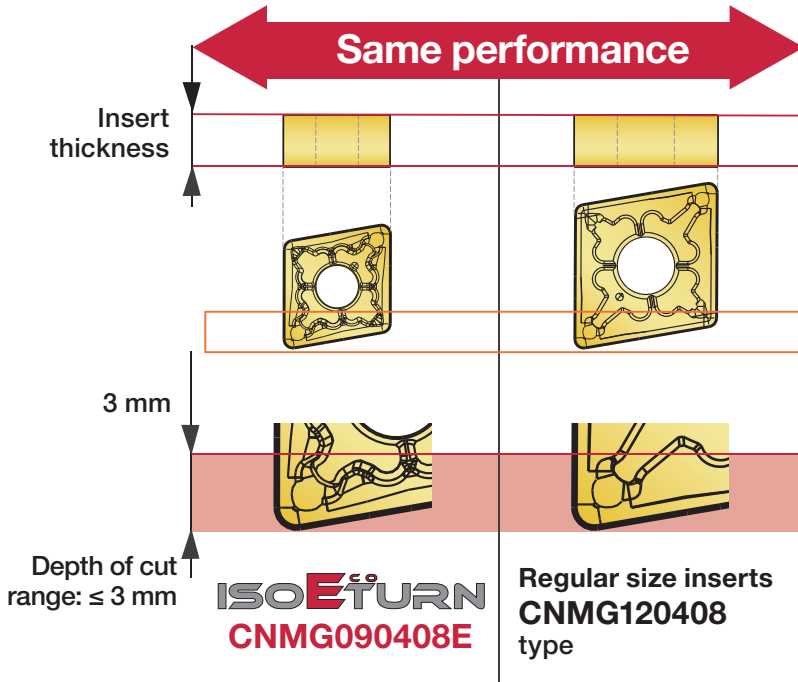
Depth of cut : ap (mm)	3.0					
	2.0					
	1.5					
	1.0					
	0.5					
Condition		0.10	0.15	0.20	0.30	0.40
Feed : f (mm/rev)						

#### Regular size inserts CNMG120408-TM

Depth of cut : ap (mm)	3.0					
	2.0					
	1.5					
	1.0					
	0.5					
Condition		0.10	0.15	0.20	0.30	0.40
Feed : f (mm/rev)						

## Uncompromising insert performance

- Comparison of ISO-EcoTurn and regular size inserts

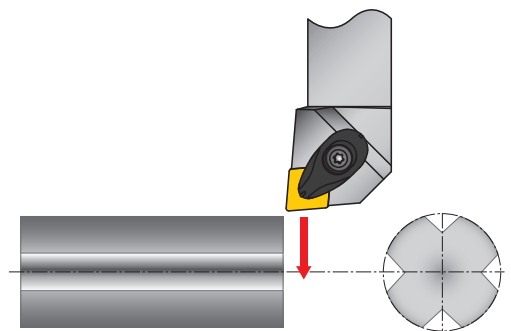
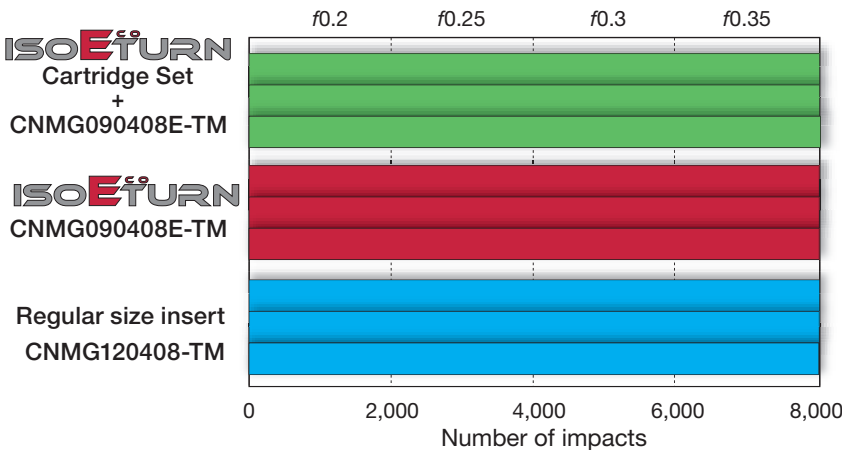


ISO-EcoTurn inserts feature the identical thickness and chipbreaker geometry as Tungaloy's regular size inserts.

These properties provide cutting performance equal to that of the regular size inserts, including chip control at a depth of cut up to 3 mm.

## Fracture resistance

- Even used Cartridge Set ISO-Eco Turn insert preserves the thickness of standard inserts in order to maintain fracture resistance.

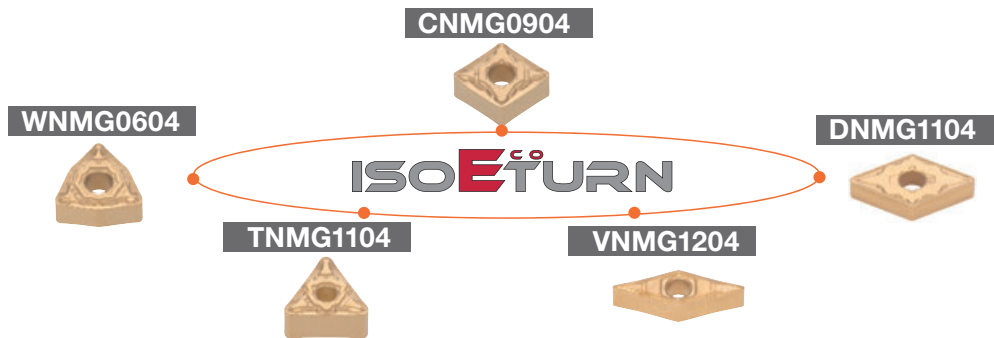


Workpiece : S45C / C45  
 Cutting speed :  $V_c = 150$  m/min  
 Feed :  $f = 0.2 - 0.35$  mm/rev  
 Depth of cut :  $a_p = 3.0$  mm  
 Work process : Face turning (Interrupted)  
 Coolant : Wet

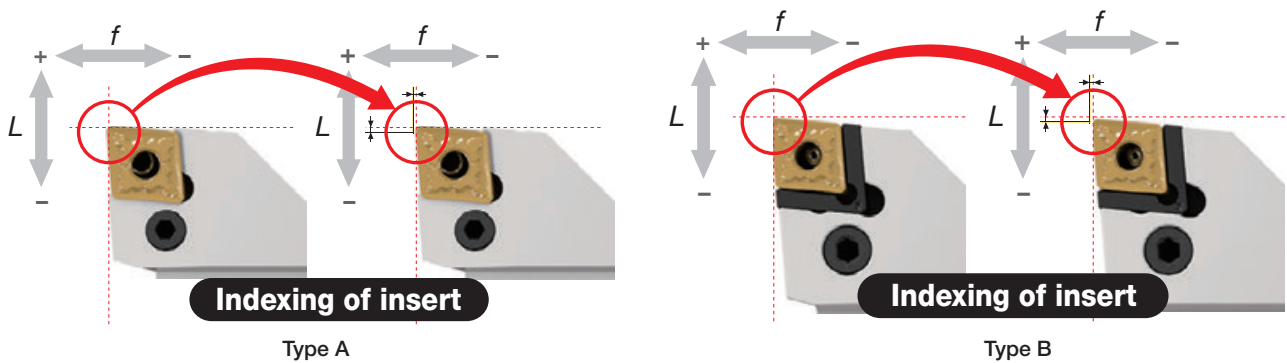


# A complete tooling solution now available with ISO-EcoTurn

For a wide range of turning applications.



## Indexing accuracy



Type	Tool holder	Insert	Cartridge Set	f direction (µm)	L direction (µm)
A: <b>ISO-EcoTURN</b>	PCLNR**09	CNMG090412E-TM	-	1	2
B: <b>ISO-EcoTURN</b> + Cartridge Set	PCLNR**12	CNMG090412E-TM	AD-CL-4/3-SET	1.7	2.5
C: Competitor P-type tool holder	PCLNR**12	CNMG120412-TM	-	2	4

## GRADES & CHIPBREAKERS

### T9200 SERIES (CVD)

#### PREMIUMTEC

- T9205** : Good wear resistance
- T9215** : First choice for machining steel
- T9225** : Grade with a good balance of wear resistance and fracture toughness

### NS9530 & GT9530

(Cermet) (Coated cermet)

#### PREMIUMTEC

- NS9530** : Suitable for finishing to medium cutting of steel
- GT9530** : Ideal for finishing with high surface quality

### AH600 SERIES (PVD)

#### PREMIUMTEC

- AH630** : Good resistance to wear and fracture in machining stainless steel at low to medium cutting speed
- AH645** : High fracture resistance in machining stainless steel

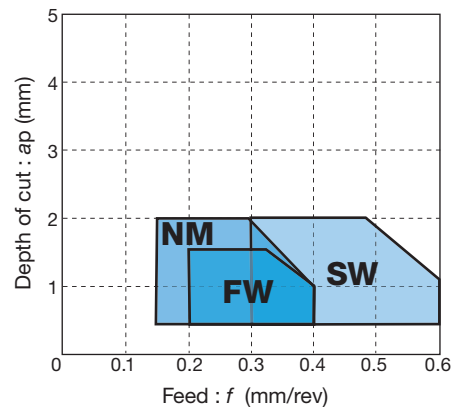
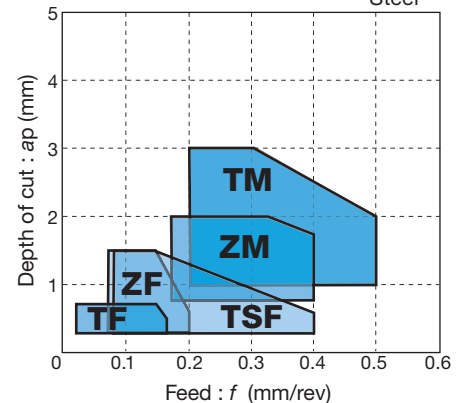
### T6100 SERIES (CVD)

#### PREMIUMTEC

- T6120** : Good wear resistance in continuous cutting at high speed
- T6130** : High wear resistance in cutting at medium to high speed

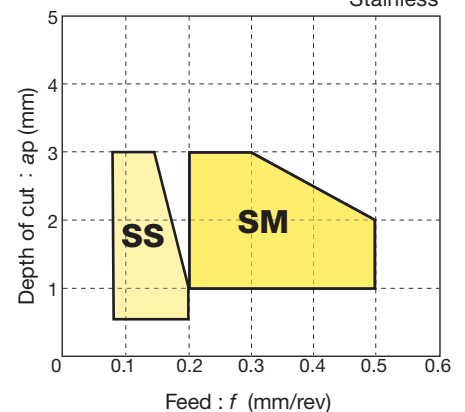
**P**

Steel



**M**

Stainless



**GRADES & CHIPBREAKERS**

**T5100 SERIES (CVD)**

**PREMIUMTEC**  
TUNGALOY

**T5115** : Stable machining in a wide range of applications from continuous to interrupted cutting

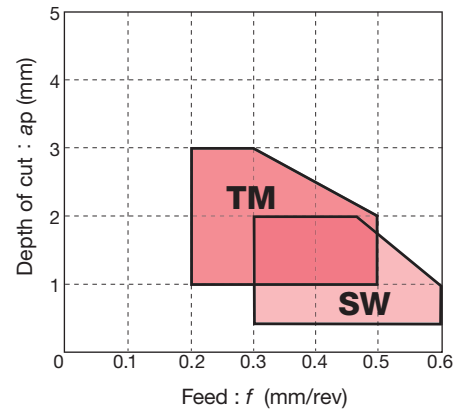
**T515 (CVD)**

**PREMIUMTEC**  
TUNGALOY

**T515** : Good wear resistance even in high speed machining



Cast Iron



**AH8000 SERIES (PVD)**

**PREMIUMTEC**  
TUNGALOY

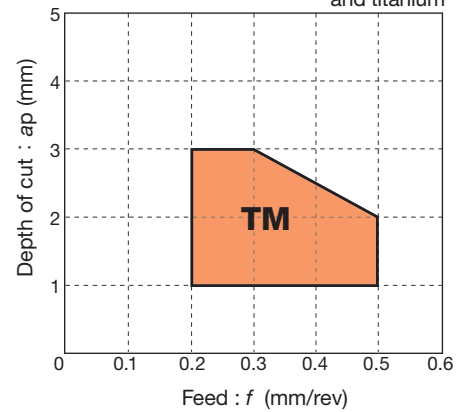
**AH8015** : Strong resistance to wear and built up edge



Stainless



Superalloys and titanium



**AH120 (PVD)**

**PREMIUMTEC**  
TUNGALOY

**AH120** : Suitable for machining steel, stainless steel, cast iron and heat resistant alloys under general cutting conditions



Steel



Stainless



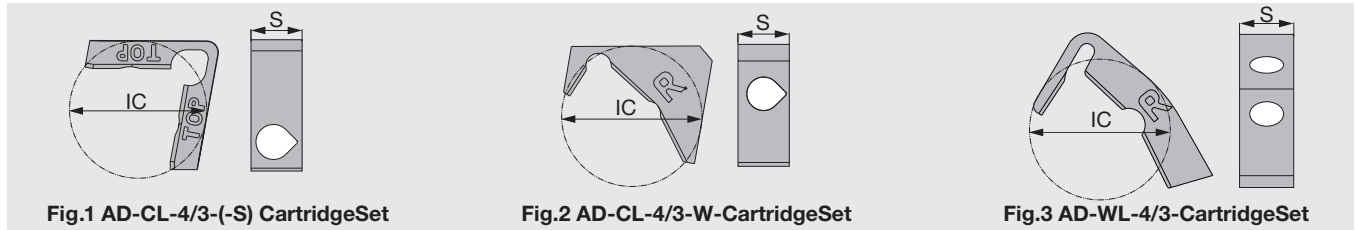
Cast Iron



Superalloys and titanium




## AD-\*L-4/3-\***-SET**



Cartridge Set for ISO-Eco Turn insert



Designation	IC	S	Insert	Fig.
AD-CL-4/3-SET	12.7	4.72	CNM**0904**E	1
AD-CL-4/3-SET-S	12.7	4.72	CNM**0904**E	1
AD-CL-4/3-W-SET	12.7	5	WNM**0604**E	2
AD-WL-4/3-SET	12.7	5	WNM**0604**E	3

Cartridge set cannot be assembled on Tungaloy's P-style holders.

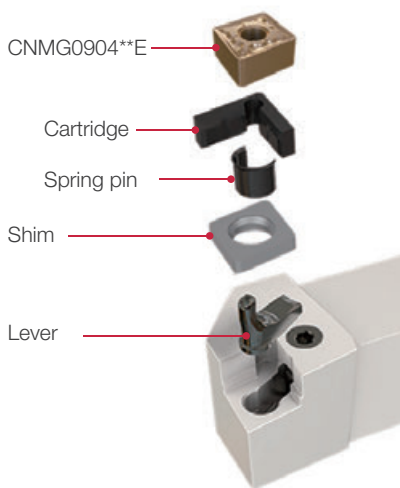
SPARE PARTS			
Designation	Cartridge	Lever	Wrench
AD-CL-4/3-SET	AD-CL-4/3	LR4/3	HW3.0/5
AD-CL-4/3-SET-S	AD-CL-4/3	LR4/3-T	HW3.0/5
AD-WL-4/3-SET	AD-WL-4/3	LR4/3	HW3.0/5
AD-CL-4/3-W-SET	AD-CL-4/3-W	LR4/3	HW3.0/5

	
Shim	Spring pin
TCN423	-
TWN423	-
LSC42-ECO D30	LSP4

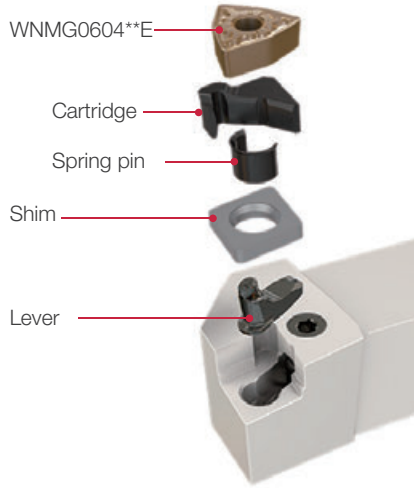
Shim and spring are not included

# How to install the Cartridge Set

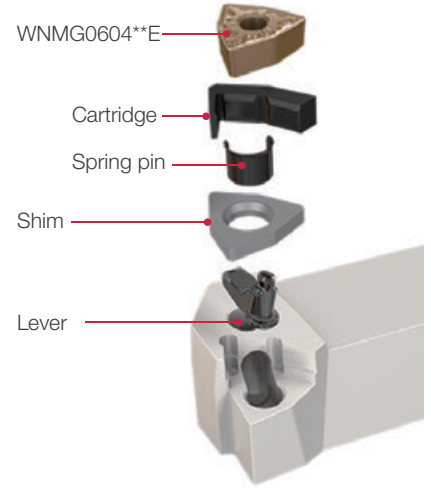
- ① Remove the Shim sheet and Lever from the using toolholder (P type : Lever lock stlye).
- ② Install the Lever → Shim sheet → Spring Pin → Cartridge.
- Note: Use the key for easy assembly of the spring pin.
- ③ Offset the cutting edge position.
- ④ OK to machining.



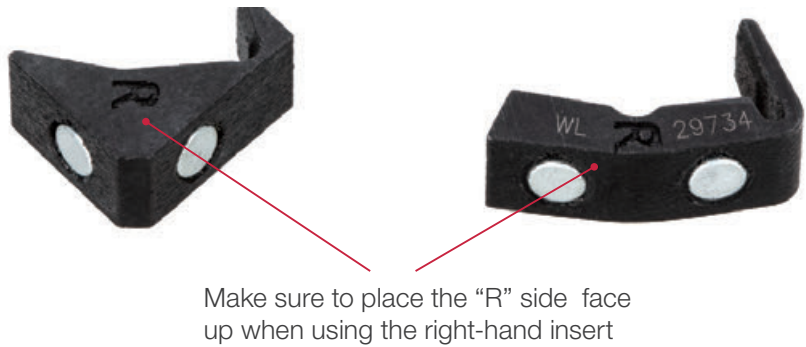
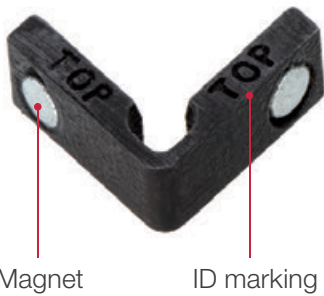
Cartridge for  
CNMG12 ⇒ Eco CNMG09



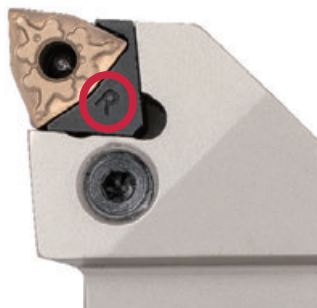
Cartridge for  
CNMG12 ⇒ Eco WNMG06



Cartridge for  
WNMG08 ⇒ Eco WNMG06



◆ Ensures TOP side is placed face up for both right- and left-hand inserts



Note: Cartridge set cannot be assembled on Tungaloy's P-style holders.  
This product might correspond to the Export Trade Control Order.  
When you export this product, you might need apply for export licenses to the authorities in your country.

## Insert NEGATIVE TYPE

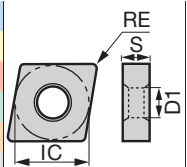
- : Continuous cutting
- ◐ : Light interrupted cutting
- ✳ : Heavy interrupted cutting

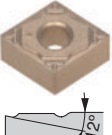
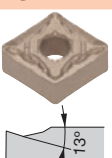
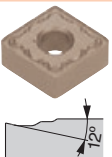
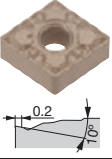
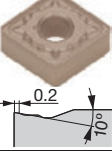
### CN



**Rhombic, 80° with hole**

	P	M	K	N	S	H													
Steel	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Stainless	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Cast iron	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Non-ferrous	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Superalloys	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Hard materials	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●



Application	Chipbreaker	Designation	Coated													Coated cermet		Cermet	Dimension (mm)				
			T9205	T9215	T9225	T9105	T9115	T9125	T6120	T6130	AH630	AH645	AH120	AH8015	T515	T5115	GT9530	AT9530	NS9530	RE	IC	S	D1
Precision finishing		<b>TF</b> <b>CNMG090402E-TF</b>	●	●	●														0.2	9.525	4.76	3.81	
		<b>CNMG090404E-TF</b>	●	●	●															0.4	9.525	4.76	3.81
		<b>CNMG090408E-TF</b>	●	●	●															0.8	9.525	4.76	3.81
Finishing		<b>TSF</b> <b>CNMG090402E-TSF</b>	●	●								●	●						0.2	9.525	4.76	3.81	
		<b>CNMG090404E-TSF</b>	●	●		▲	▲						●	●		●	●	●		0.4	9.525	4.76	3.81
		<b>CNMG090408E-TSF</b>	●	●		▲	▲						●	●		●	●	●		0.8	9.525	4.76	3.81
Finishing (wiper)		<b>FW</b> <b>CNMG090404E-FW</b>	●	●	▲	▲	▲								●		●		0.4	9.525	4.76	3.81	
		<b>CNMG090408E-FW</b>	●	●	▲	▲	▲								●		●		0.8	9.525	4.76	3.81	
Finishing		<b>ZF</b> <b>CNMG090404E-ZF</b>	●	●		▲	▲												0.4	9.525	4.76	3.81	
		<b>SW</b> <b>CNMG090408E-SW</b>	●	●	▲	▲	▲								●				0.8	9.525	4.76	3.81	
Finishing to medium cutting (wiper)		<b>CNMG090412E-SW</b>	●	●	▲	▲	▲							●				1.2	9.525	4.76	3.81		

\* Please contact our sales representative for your inquiries about the program adjustment when using SW/FW for machining of radius shape or taper machining.

- New
- Line up
- ▲ To be discontinued

# Insert NEGATIVE TYPE

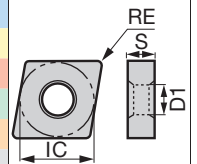
● : Continuous cutting  
 ◐ : Light interrupted cutting  
 ✱ : Heavy interrupted cutting

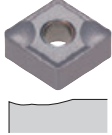
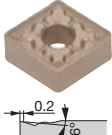
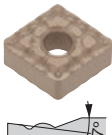
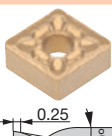

## CN



Rhombic, 80°  
with hole

	P	M	K	N	S	H
●						
◐						
✱						
	●	●	●	●	●	●
	●	●	●	●	●	●
	●	●	●	●	●	●
	●	●	●	●	●	●
	●	●	●	●	●	●
	●	●	●	●	●	●
	●	●	●	●	●	●
	●	●	●	●	●	●
	●	●	●	●	●	●
	●	●	●	●	●	●
	●	●	●	●	●	●
	●	●	●	●	●	●



Application	Chipbreaker	Designation	Coated											Coated cermet		Cermet	Dimension (mm)						
			T9205	T9215	T9225	T9105	T9115	T9125	T6120	T6130	AH630	AH645	AH120	AH8015	T515	T5115	GT9530	AT9530	NS9530	RE	IC	S	D1
Finishing		<b>SS</b> CNMG090404E-SS											●	●					0.4	9.525	4.76	3.81	
		CNMG090408E-SS												●	●					0.8	9.525	4.76	3.81
Medium cutting		<b>TM</b> CNMG090404E-TM		●	●	▲	▲	●	●	●			●	●	●					0.4	9.525	4.76	3.81
		CNMG090408E-TM		●	●	▲	▲	●	●	●			●	●	●					0.8	9.525	4.76	3.81
		CNMG090412E-TM		●	●	▲	▲	●	●	●			●	●	●					1.2	9.525	4.76	3.81
Finishing to medium cutting		<b>ZM</b> CNMG090408E-ZM		●	●		▲	▲											0.8	9.525	4.76	3.81	
Medium cutting		<b>SM</b> CNMG090404E-SM								●	●	●							0.4	9.525	4.76	3.81	
		CNMG090408E-SM								●	●	●							0.8	9.525	4.76	3.81	
		CNMG090412E-SM								●	●	●							1.2	9.525	4.76	3.81	
Finishing to medium cutting		- CNMA090404E												●					0.4	9.525	4.76	3.81	
		CNMA090408E													●					0.8	9.525	4.76	3.81
		CNMA090412E													●					1.2	9.525	4.76	3.81
		CNMA090416E													●					1.6	9.525	4.76	3.81

● : Line up  
 ▲ : To be discontinued

## Insert NEGATIVE TYPE

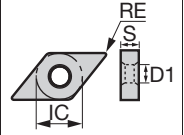
- : Continuous cutting
- ◐ : Light interrupted cutting
- ✱ : Heavy interrupted cutting

### DN



**Rhombic, 55° with hole**

P	Steel	●	●	●	●	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐
M	Stainless	●	●								●	●	●	✱	◐	◐				
K	Cast iron	●	●	●	●															
N	Non-ferrous																			
S	Superalloys																		●	●
H	Hard materials																			



Application	Chipbreaker	Designation	Coated												Coated cermet		Cermet	Dimension (mm)						
			T9205	T9215	T9225	T9105	T9115	T9125	T6120	T6130	AH630	AH645	AH120	AH8015	T515	T5115	GT9530	AT9530	NS9530	RE	IC	S	D1	
Precision finishing		<b>TF</b> DNMG110402E-TF	●	●																0.2	9.525	4.76	3.81	
		DNMG110404E-TF	●	●																	0.4	9.525	4.76	3.81
		DNMG110408E-TF	●	●																	0.8	9.525	4.76	3.81
Finishing		<b>TSF</b> DNMG110402E-TSF	●	●									●	●						0.2	9.525	4.76	3.81	
		DNMG110404E-TSF	●	●	▲	▲							●	●		●				0.4	9.525	4.76	3.81	
		DNMG110408E-TSF	●	●	▲	▲							●	●		●				0.8	9.525	4.76	3.81	
		DNMG110412E-TSF	●	●	▲	▲							●	●		●				1.2	9.525	4.76	3.81	
Finishing (wiper)		<b>FW</b> DNMG110404E-FW	●		▲															0.4	9.525	4.76	3.81	
		DNMG110408E-FW	●		▲																0.8	9.525	4.76	3.81
Finishing		<b>ZF</b> DNMG110404E-ZF	●	●	▲	▲														0.4	9.525	4.76	3.81	
Finishing to medium cutting (wiper)		<b>SW</b> DNMG110408E-SW	●		▲															0.8	9.525	4.76	3.81	
		DNMG110412E-SW	●		▲																1.2	9.525	4.76	3.81

\* Please contact our sales representative for your inquiries about the program adjustment when using SW/FW for machining of radius shape or taper machining.

- : New
- : Line up
- ▲ : To be discontinued

Reference pages : External toolholders → P.24 - Internal toolholders → P.39 -



# Insert NEGATIVE TYPE

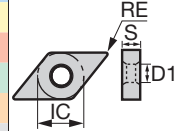
● : Continuous cutting  
 ● : Light interrupted cutting  
 ✖ : Heavy interrupted cutting

## DN



**Rhombic, 55° with hole**

Material	P	M	K	N	S	H	Coated	Coated cermet	Cermet
Steel	●	●	●	●	●	●	●	●	●
Stainless	●	●							
Cast iron	●	●	●	●	●	●	●	●	●
Non-ferrous				●	●	●			
Superalloys					●	●			
Hard materials									



Application	Chipbreaker	Designation	Coated												Coated cermet		Cermet	Dimension (mm)				
			T9205	T9215	T9225	T9105	T9115	T9125	T6120	T6130	AH630	AH645	AH120	AH8015	T515	T5115	GT9530	AT9530	NS9530	RE	IC	S
Finishing		<b>SS</b> DNMG110404E-SS									●	●							0.4	9.525	4.76	3.81
		DNMG110408E-SS									●	●							0.8	9.525	4.76	3.81
Medium cutting		<b>TM</b> DNMG110404E-TM	●	●		▲	▲					●	●						0.4	9.525	4.76	3.81
		DNMG110408E-TM	●	●		▲	▲					●	●						0.8	9.525	4.76	3.81
		DNMG110412E-TM	●	●		▲	▲					●	●						1.2	9.525	4.76	3.81
Finishing to medium cutting		<b>ZM</b> DNMG110408E-ZM	●	●		▲	▲											0.8	9.525	4.76	3.81	
Medium cutting		<b>SM</b> DNMG110404E-SM								●	●	●							0.4	9.525	4.76	3.81
		DNMG110408E-SM									●	●	●						0.8	9.525	4.76	3.81
Finishing to medium cutting		- DNMA110404E												●				0.4	9.525	4.76	3.81	
		DNMA110408E												●				0.8	9.525	4.76	3.81	
		DNMA110412E												●				1.2	9.525	4.76	3.81	

● : New  
 ● : Line up  
 ▲ : To be discontinued

Reference pages : External toolholders → **P.24** - Internal toolholders → **P.39** -

## Insert NEGATIVE TYPE

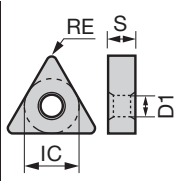
- : Continuous cutting
- ◐ : Light interrupted cutting
- ✱ : Heavy interrupted cutting

### TN



**Triangular, 60°  
with hole**

P	Steel	●●●●●✱●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	
M	Stainless	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●
K	Cast iron	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●
N	Non-ferrous	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●
S	Superalloys	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●
H	Hard materials	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●



Application	Chipbreaker	Designation	Coated											Coated cermet		Cermet	Dimension (mm)					
			T9205	T9215	T9225	T9105	T9115	T9125	T6120	T6130	AH630	AH645	AH120	AH8015	T515	T5115	GT9530	AT9530	NS9530	RE	IC	S
Precision finishing		<b>TF</b> TNMG110402E-TF	●	●															0.2	6.35	4.76	2.26
		TNMG110404E-TF	●	●															0.4	6.35	4.76	2.26
		TNMG110408E-TF	●	●															0.8	6.35	4.76	2.26
Finishing		<b>TSF</b> TNMG110402E-TSF	●	●														0.2	6.35	4.76	2.26	
		TNMG110404E-TSF	●	●		▲	▲						●	●		●		0.4	6.35	4.76	2.26	
		TNMG110408E-TSF	●	●		▲	▲						●	●		●		0.8	6.35	4.76	2.26	
Finishing (wiper)		<b>FW</b> TNMG110404E-FW	●			▲											0.4	6.35	4.76	2.26		
		TNMG110408E-FW	●			▲												0.8	6.35	4.76	2.26	
Finishing to medium cutting (wiper)		<b>SW</b> TNMG110408E-SW	●			▲											0.8	6.35	4.76	2.26		
		TNMG110412E-SW	●			▲												1.2	6.35	4.76	2.26	

\* Please contact our sales representative for your inquiries about the program adjustment when using SW/FW for machining of radius shape or taper machining.

- : Line up
- ▲ : To be discontinued

# Insert NEGATIVE TYPE

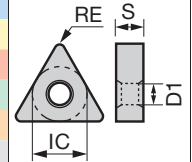
● : Continuous cutting  
 ● : Light interrupted cutting  
 ✖ : Heavy interrupted cutting

## TN



Triangular, 60° with hole

P	Steel	●	●	●	✖	●	●	●	✖	●	●	●	●	●	●	●	●	●	●
M	Stainless	●	●					●	●	●	✖	●	●	●	●				
K	Cast iron	●	●	●	●	●						●	●	●	●	●	●	●	●
N	Non-ferrous																		
S	Superalloys														●	●	●		
H	Hard materials																		



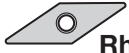
Application	Chipbreaker	Designation	Coated											Coated cermet		Cermet	Dimension (mm)						
			T9205	T9215	T9225	T9105	T9115	T9125	T6120	T6130	AH630	AH645	AH120	AH8015	T515	T5115	GT9530	AT9530	NS9530	RE	IC	S	D1
Finishing		TNMG110404E-SS								●	●								0.4	6.35	4.76	2.26	
		TNMG110408E-SS								●	●								0.8	6.35	4.76	2.26	
Medium cutting		TNMG110404E-TM		●	●		▲	▲											0.4	6.35	4.76	2.26	
		TNMG110408E-TM		●	●		▲	▲												0.8	6.35	4.76	2.26
		TNMG110412E-TM		●	●		▲	▲												1.2	6.35	4.76	2.26
Medium cutting		TNMG110404E-SM							●	●	●								0.4	6.35	4.76	2.26	
		TNMG110408E-SM							●	●	●								0.8	6.35	4.76	2.26	
Finishing to medium cutting		TNMA110404E											●						0.4	6.35	4.76	2.26	
		TNMA110408E											●						0.8	6.35	4.76	2.26	
		TNMA110412E											●						1.2	6.35	4.76	2.26	

● : Line up  
 ▲ : To be discontinued

## Insert NEGATIVE TYPE

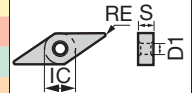
- : Continuous cutting
- ◐ : Light interrupted cutting
- ◑ : Heavy interrupted cutting

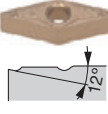
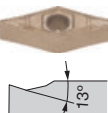
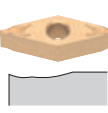
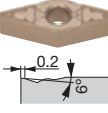
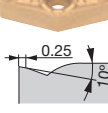

### VN



**Rhombic, 35° with hole**

	P	M	K	N	S	H
Steel	● ● ● ● ◐	● ●	● ● ● ●	● ● ● ●	● ● ● ●	● ● ● ●
Stainless	● ●	● ●	● ● ● ●	● ● ● ●	● ● ● ●	● ● ● ●
Cast iron	● ● ● ●	● ● ● ●	● ● ● ●	● ● ● ●	● ● ● ●	● ● ● ●
Non-ferrous	● ● ● ●	● ● ● ●	● ● ● ●	● ● ● ●	● ● ● ●	● ● ● ●
Superalloys	● ● ● ●	● ● ● ●	● ● ● ●	● ● ● ●	● ● ● ●	● ● ● ●
Hard materials	● ● ● ●	● ● ● ●	● ● ● ●	● ● ● ●	● ● ● ●	● ● ● ●



Application	Chipbreaker	Designation	Coated										Coated cermet	Cermet	Dimension (mm)								
			T9205	T9215	T9225	T9105	T9115	T9125	T6120	T6130	AH630	AH645	AH120	AH8015	T515	T5115	GT9530	AT9530	NS9530	RE	IC	S	D1
Precision finishing	 12°	TF VNMG120402E-TF	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	0.2	7.15	4.76	3.81	
		VNMG120404E-TF	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	0.4	7.15	4.76	3.81	
		VNMG120408E-TF	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	0.8	7.15	4.76	3.81	
Finishing	 13°	TSF VNMG120402E-TSF	●	●	▲	▲										●	●	●	0.2	7.15	4.76	3.81	
		VNMG120404E-TSF	●	●	▲	▲											●	●	●	0.4	7.15	4.76	3.81
		VNMG120408E-TSF	●	●	▲	▲											●	●	●	0.8	7.15	4.76	3.81
		SS VNMG120404E-SS						●	●	●	●							0.4	7.15	4.76	3.81		
		VNMG120408E-SS						●	●	●	●								0.8	7.15	4.76	3.81	
Medium cutting	 0.2 0.6	TM VNMG120404E-TM	●	●	▲	▲													0.4	7.15	4.76	3.81	
		VNMG120408E-TM	●	●	▲	▲														0.8	7.15	4.76	3.81
	 0.25 7.0°	SM VNMG120404E-SM						●	●	●	●							0.4	7.15	4.76	3.81		
		VNMG120408E-SM						●	●	●	●								0.8	7.15	4.76	3.81	
Finishing to medium cutting		- VNMA120404E											●					0.4	7.15	4.76	3.81		
		VNMA120408E											●						0.8	7.15	4.76	3.81	

- : Line up
- ▲ : To be discontinued

Reference pages : External toolholders → **P.26** - Internal toolholders → **P.40**



## Insert NEGATIVE TYPE

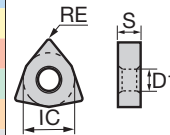
● : Continuous cutting  
 ● : Light interrupted cutting  
 \* : Heavy interrupted cutting

### WN



Trigon, 80° with hole

	P	M	K	N	S	H	T9205	T9215	T9225	T9105	T9115	T9125	T6120	T6130	AH630	AH645	AH120	AH8015	T515	T5115	GT9530	AT9530	NS9530
Steel	●●●●●						●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●
Stainless	●●	●●					●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●	●●
Cast iron	●●●●●		●●●●●				●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●
Non-ferrous				●●●●●																			
Superalloys					●●●●●												●●	●					
Hard materials						●●●●●																	



Application	Chipbreaker	Designation	Coated																			Coated cermet		Cermet	Dimension (mm)							
			T9205	T9215	T9225	T9105	T9115	T9125	T6120	T6130	AH630	AH645	AH120	AH8015	T515	T5115	GT9530	AT9530	NS9530	RE	IC	S	D1									
Finishing		<b>SS</b> WNMG060404E-SS													●	●									0.4	9.525	4.76	3.81				
		WNMG060408E-SS														●	●										0.8	9.525	4.76	3.81		
		WNMG060412E-SS														●	●											1.2	9.525	4.76	3.81	
Medium cutting		<b>TM</b> WNMG060404E-TM		●	●		▲	▲										●	●								0.4	9.525	4.76	3.81		
		WNMG060408E-TM		●	●		▲	▲											●	●								0.8	9.525	4.76	3.81	
		WNMG060412E-TM		●	●		▲	▲											●	●									1.2	9.525	4.76	3.81
Finishing to medium cutting		<b>NM</b> WNMG060412E-NM			●				▲																			1.2	9.525	4.76	3.81	
		<b>ZM</b> WNMG060408E-ZM		●	●		▲	▲																					0.8	9.525	4.76	3.81
Medium cutting		<b>SM</b> WNMG060404E-SM											●	●	●													0.4	9.525	4.76	3.81	
		WNMG060408E-SM											●	●	●														0.8	9.525	4.76	3.81
		WNMG060412E-SM											●	●	●														1.2	9.525	4.76	3.81
Finishing to medium cutting		- WNMA060404E																	●									0.4	9.525	4.76	3.81	
		WNMA060408E																	●									0.8	9.525	4.76	3.81	
		WNMA060412E																	●									1.2	9.525	4.76	3.81	
		WNMA060416E																	●									1.6	9.525	4.76	3.81	

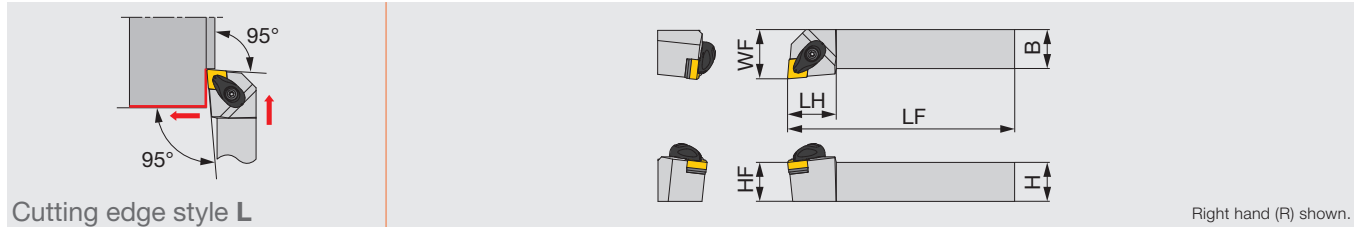
● : New  
 ● : Line up  
 ▲ : To be discontinued

Reference pages : External toolholders → P.22 - Internal toolholders → P.38

# External toolholders

## ACLNR/L-Eco

Double-clamp toolholder with 95° approach angle, for negative 80° rhombic inserts



Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
ACLNR/L2020K0904-A	20	20	125	25	20	25	0.8	CN**0904...	3
ACLNR/L2525M0904-A	25	25	150	25	25	32	0.8	CN**0904...	3

\*Torque: Recommended torque (N-m) for clamping

\*\*RE: The holder measurements are true with this insert radius

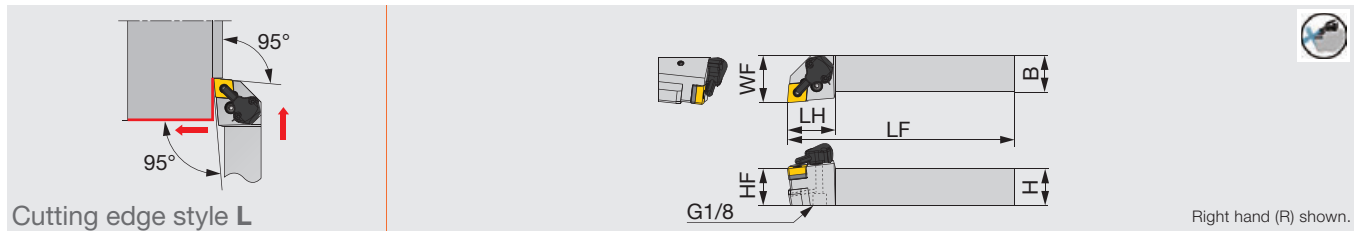
### SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
ACLNR/L**0904-A	ACP3S-E	ACS-5W	BP-7	SP-2.5	ASC322	CSTB-3.5	T-15F

# TUNG T<sup>URN</sup>JET

## PCLNR/L-CHP-Eco

Lever-lock toolholder with 95° approach angle, for negative 80° rhombic inserts, with high pressure coolant capability



Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PCLNR/L2020K0904-CHP	20	20	125	33	20	32	0.8	CN**0904...	2
PCLNR/L2525M0904-CHP	25	25	150	33	25	32	0.8	CN**0904...	2

\*Torque: Recommended torque (N-m) for clamping

\*\*RE: The holder measurements are true with this insert radius

### SPARE PARTS

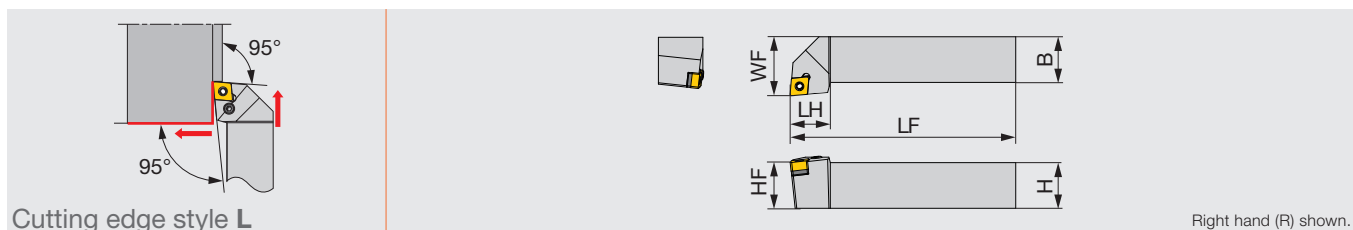
Designation	Shim	Clamping screw	Wrench 1	Spring pin	Lever
PCLNR/L**0904-CHP	LSC317	LCS3	P-2.5	LSP3	LCL33

### SPARE PARTS

Designation	Coolant unit	Mounting screw	Wrench 2	O-ring	Coolant screw	Wrench 3
PCLNR/L**0904-CHP	CU-CW-CHP	SRM3	T-8F	OR6.4X0.9N	SRM4X4TL360	P-2

## PCLNR/L-Eco

Lever-lock toolholder with 95° approach angle, for negative 80° rhombic inserts



Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PCLNR/L2020K0904	20	20	125	20	20	25	0.8	CN**0904...	2
PCLNR/L2525M0904	25	25	150	25	25	32	0.8	CN**0904...	2

\*Torque: Recommended torque (N-m) for clamping

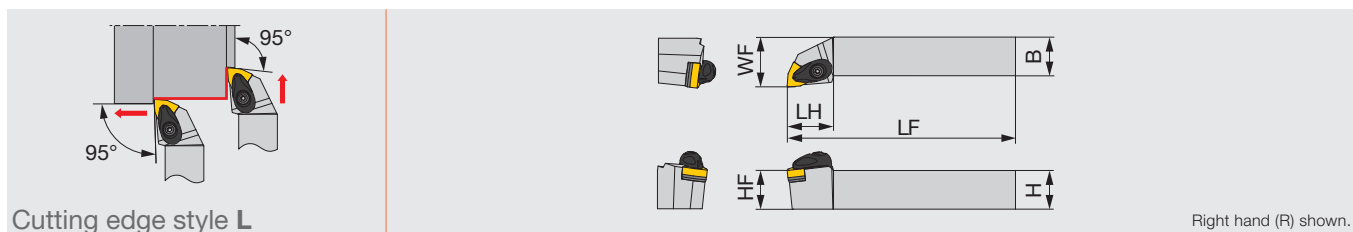
\*\*RE: The holder measurements are true with this insert radius

### SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PCLNR/L**0904	LSC317	LCS3	P-2.5	LSP3	LCL33

## AWLNR/L-Eco

Double-clamp toolholder with 95° approach angle, for negative 80° trigon inserts



Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
AWLNR/L2020K0604-A	20	20	125	27	20	25	0.8	WN**0604...	3
AWLNR/L2525M0604-A	25	25	150	27	25	32	0.8	WN**0604...	3

\*Torque: Recommended torque (N-m) for clamping

\*\*RE: The holder measurements are true with this insert radius

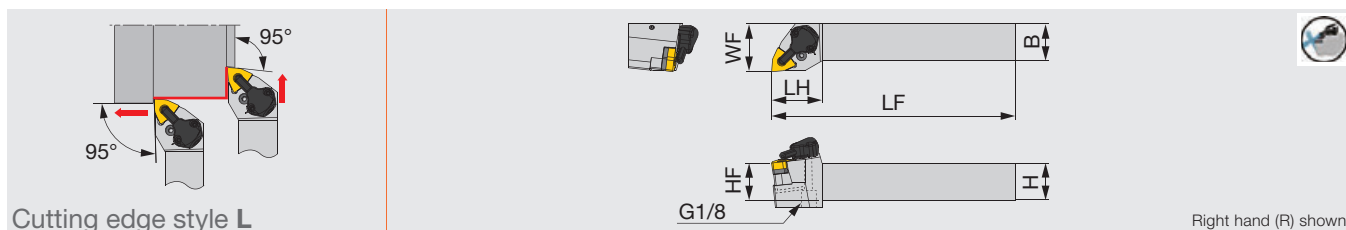
### SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
AWLNR/L**0604-A	ACP3S-E	ACS-5W	BP-7	SP-2.5	ASW322	CSTB-3.5	T-15F



# TUNGTURN PWLNR/L-CHP

Lever-lock toolholder with 95° approach angle, for negative 80° trigon inserts, with high pressure coolant capability



Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PWLNR/L2020K0604-CHP	20	20	125	34	20	32	0.8	WN**0604...	2
PWLNR/L2525M0604-CHP	25	25	150	34	25	32	0.8	WN**0604...	2

\*Torque: Recommended torque (N-m) for clamping

\*\*RE: The holder measurements are true with this insert radius

## SPARE PARTS

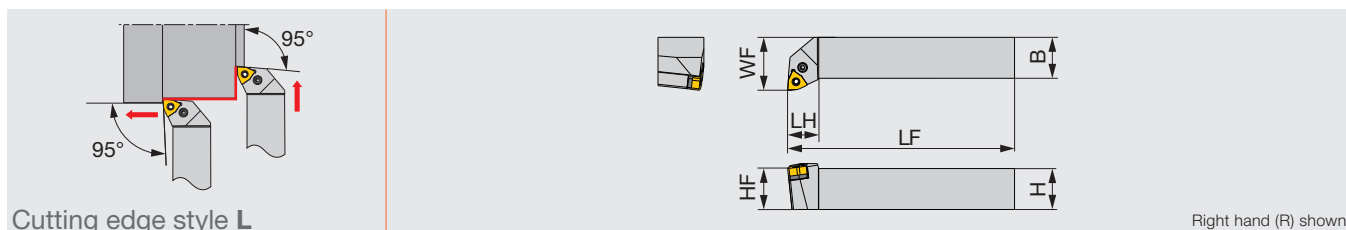
Designation	Shim	Clamping screw	Wrench 1	Spring pin	Lever
PWLNR/L**0604-CHP	LSW312	LCS3	P-2.5	LSP3	LCL3

## SPARE PARTS

Designation	Coolant unit	Mounting screw	Wrench 2	O-ring	Coolant screw	Wrench 3
PWLNR/L**0604-CHP	CU-CW-CHP	SRM3	T-8F	OR6.4X0.9N	SRM4X4TL360	P-2

# PWLNR/L-Eco

Lever-lock toolholder with 95° approach angle, for negative 80° trigon inserts



Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PWLNR/L2020K0604	20	20	125	15	20	25	0.8	WN**0604...	2
PWLNR/L2525M0604	25	25	150	19	25	32	0.8	WN**0604...	2

\*Torque: Recommended torque (N-m) for clamping

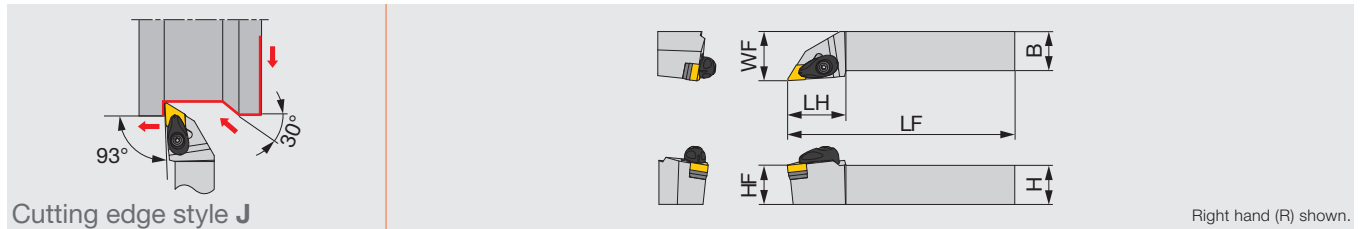
\*\*RE: The holder measurements are true with this insert radius

## SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PWLNR/L**0604	LSW312	LCS3	P-2.5	LSP3	LCL3

## ADJNR/L-Eco

Double-clamp toolholder with 93° approach angle, for negative 55° rhombic inserts



Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
ADJNR/L2020K1104-A	20	20	125	30	20	25	0.8	DN**1104...	3
ADJNR/L2525M1104-A	25	25	150	30	25	32	0.8	DN**1104...	3

\*Torque: Recommended torque (N-m) for clamping

\*\*RE: The holder measurements are true with this insert radius

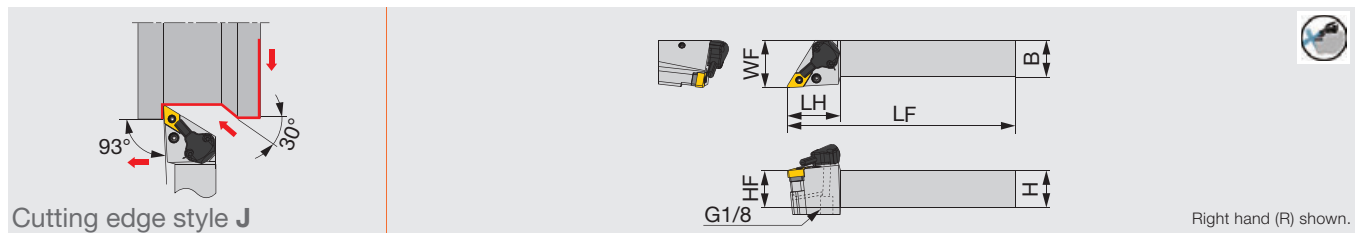
### SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
ADJNR/L**1104-A	ACP3S-E	ACS-5W	BP-7	SP-2.5	ASD322	CSTB-3.5	T-15F

## TUNG<sup>TURN</sup>TJET

### PDJNR/L-CHP-Eco

Lever-lock toolholder with 93° approach angle, for negative 55° rhombic inserts, with high pressure coolant capability



Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PDJNR/L2020K1104-CHP	20	20	125	36	20	32	0.8	DN**1104...	2
PDJNR/L2525M1104-CHP	25	25	150	36	25	32	0.8	DN**1104...	2

\*Torque: Recommended torque (N-m) for clamping

\*\*RE: The holder measurements are true with this insert radius

### SPARE PARTS

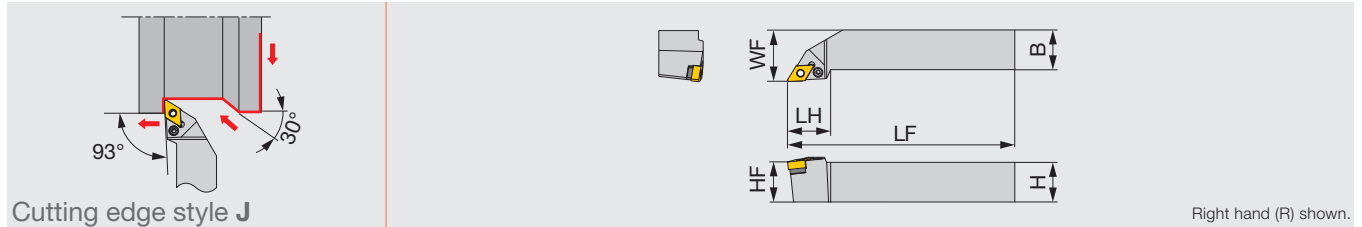
Designation	Shim	Clamping screw	Wrench 1	Spring pin	Lever
PDJNR/L**1104-CHP	ELSD32	LCS3	P-2.5	LSP3	LCL33L

### SPARE PARTS

Designation	Coolant unit	Mounting screw	Wrench 2	O-ring	Coolant screw	Wrench 3
PDJNR/L**1104-CHP	CU-D-CHP	SRM3	T-8F	OR6.4X0.9N	SRM4X4TL360	P-2

## PDJNR/L-Eco

Lever-lock toolholder with 93° approach angle, for negative 55° rhombic inserts



Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PDJNR/L1616H1104	16	16	100	27	16	20	0.8	DN**1104...	2
PDJNR/L2020K1104	20	20	125	27	20	25	0.8	DN**1104...	2
PDJNR/L2525M1104	25	25	150	27	25	32	0.8	DN**1104...	2

\*Torque: Recommended torque (N-m) for clamping

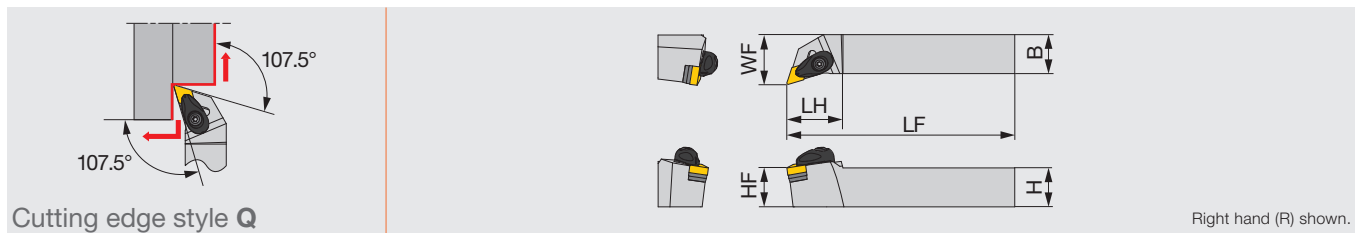
\*\*RE: The holder measurements are true with this insert radius

### SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PDJNR/L**1104	ELSD32	LCS3	P-2.5	LSP3	LCL33L

## ADQNR/L-Eco

Double-clamp toolholder with 107.5° approach angle, for negative 55° rhombic inserts



Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
ADQNR/L2020K1104-A	20	20	125	30	20	25	0.8	DN**1104...	3
ADQNR/L2525M1104-A	25	25	150	30	25	32	0.8	DN**1104...	3

\*Torque: Recommended torque (N-m) for clamping

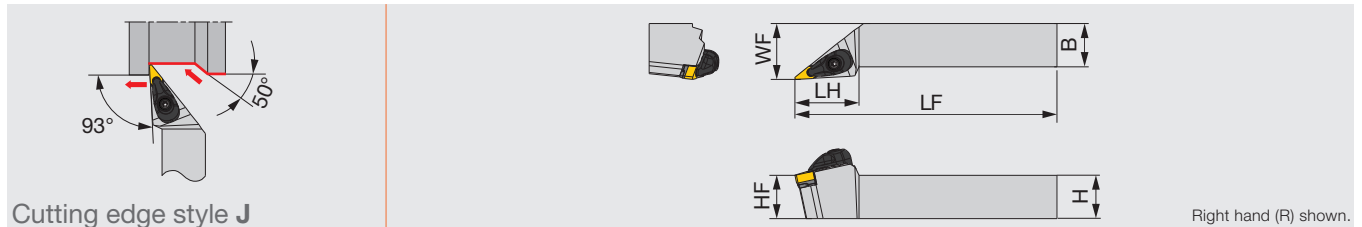
\*\*RE: The holder measurements are true with this insert radius

### SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
ADQNR/L**1104-A	ACP3S-E	ACS-5W	BP-7	SP-2.5	ASD322	CSTB-3.5	T-15F

## AVJNR/L-Eco

Double-clamp toolholder with 93° approach angle, for negative 35° rhombic inserts



Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
AVJNR/L2020K1204-A	20	20	125	37	20	25	0.8	VN**1204...	3
AVJNR/L2525M1204-A	25	25	150	37	25	32	0.8	VN**1204...	3

\*Torque: Recommended torque (N·m) for clamping

\*\*RE: The holder measurements are true with this insert radius

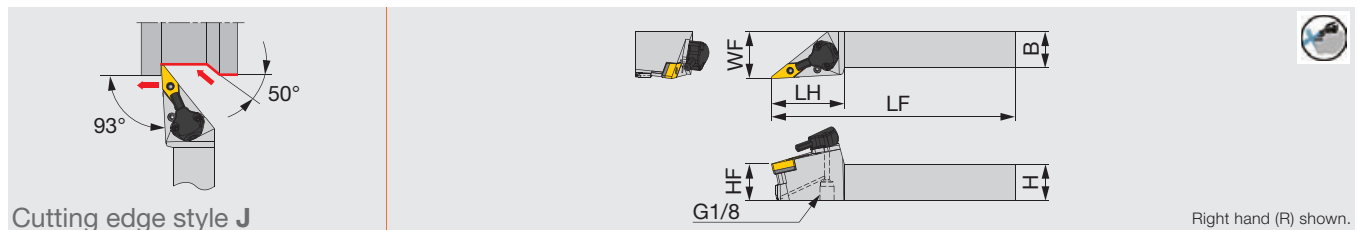
### SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
AVJNR/L**A	ACP3L-E	ACS-5W	BP-7	SP-2.5	ASV222	CSTB-3.0	T-15F

## TUNG<sup>TURN</sup>TJET

### PVJNR/L-CHP

Lever-lock toolholder with 93° approach angle, for negative 35° rhombic inserts, with high pressure coolant capability



Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PVJNR/L2020K1204-CHP	20	20	125	50	20	32	0.8	VN**1204...	2
PVJNR/L2525M1204-CHP	25	25	150	50	25	32	0.8	VN**1204...	2

\*Torque: Recommended torque (N·m) for clamping

\*\*RE: The holder measurements are true with this insert radius

### SPARE PARTS

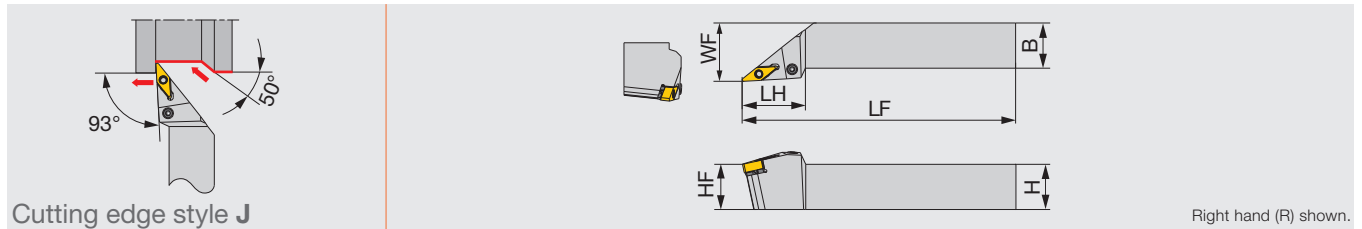
Designation	Shim	Clamping screw	Wrench 1	Spring pin	Lever
PVJNR/L**1204-CHP	LSV212	LCS3V	P-2.5	LSP3	LCL3V

### SPARE PARTS

Designation	Coolant unit	Mounting screw	Wrench 2	O-ring	Coolant screw	Wrench 3
PVJNR/L**1204-CHP	CU-V-CHP	SRM3	T-8F	OR6.4X0.9N	SRM4X4TL360	P-2

## PVJNR/L-Eco

Lever-lock toolholder with 93° approach angle, for negative 35° rhombic inserts



Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PVJNR/L2020K1204	20	20	125	35	20	25	0.8	VN**1204...	2
PVJNR/L2525M1204	25	25	150	35	25	32	0.8	VN**1204...	2

\*Torque: Recommended torque (N-m) for clamping

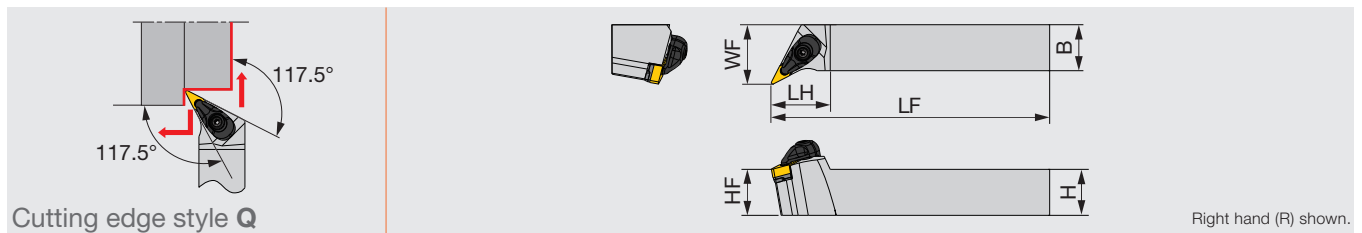
\*\*RE: The holder measurements are true with this insert radius

### SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PVJNR/L**1204	LSV212	LCS3V	P-2.5	LSP3	LCL3V

## AVQNR/L-Eco

Double-clamp toolholder with 117.5° approach angle, for negative 35° rhombic inserts



Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
AVQNR/L2020K1204-A	20	20	125	32	20	25	0.8	VN**1204...	3
AVQNR/L2525M1204-A	25	25	150	32	25	32	0.8	VN**1204...	3

\*Torque: Recommended torque (N-m) for clamping

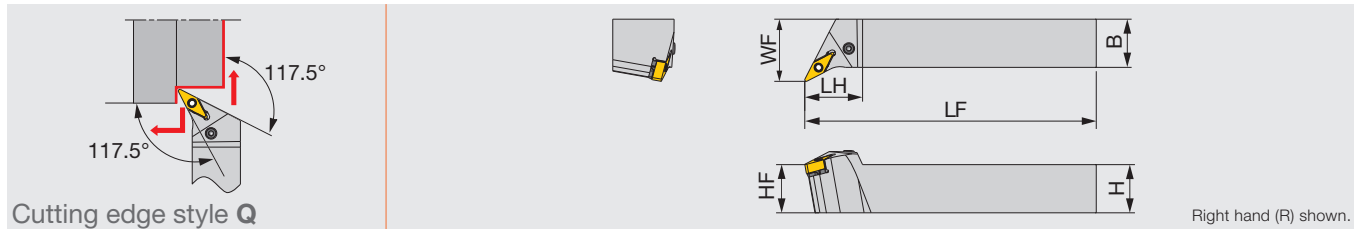
\*\*RE: The holder measurements are true with this insert radius

### SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
AVQNR/L**-A	ACP3L-E	ACS-5W	BP-7	SP-2.5	ASV222	CSTB-3.0	T-15F

## PVQNR/L-Eco

Lever-lock toolholder with 117.5° approach angle, for negative 35° rhombic inserts



Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PVQNR/L2020K1204	20	20	125	30	20	25	0.8	VN**1204...	2
PVQNR/L2525M1204	25	25	150	30	25	32	0.8	VN**1204...	2

\*Torque: Recommended torque (N·m) for clamping

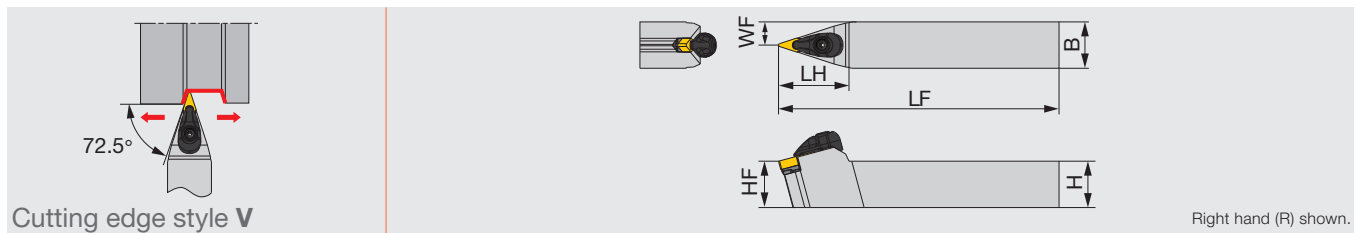
\*\*RE: The holder measurements are true with this insert radius

### SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PVQNR/L**1204	LSV212	LCS3V	P-2.5	LSP3	LCL3V

## AVVNN-Eco

Double-clamp toolholder with 72.5° approach angle, for negative 35° rhombic inserts



Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
AVVNN2020K1204-A	20	20	125	38	20	10	0.8	VN**1204...	3
AVVNN2525M1204-A	25	25	150	38	25	13	0.8	VN**1204...	3

\*Torque: Recommended torque (N·m) for clamping

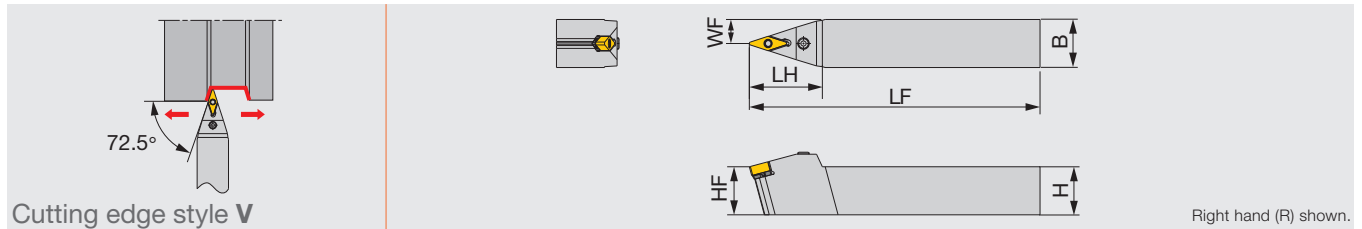
\*\*RE: The holder measurements are true with this insert radius

### SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
AVVNN**A	ACP3L-E	ACS-5W	BP-7	SP-2.5	ASV222	CSTB-3.0	T-15F

## PVVNN-Eco

Lever-lock toolholder with 72.5° approach angle, for negative 35° rhombic inserts



Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PVVNN2020K1204	20	20	125	38	20	10	0.8	VN**1204...	2
PVVNN2525M1204	25	25	150	38	25	12.5	0.8	VN**1204...	2

\*Torque: Recommended torque (N-m) for clamping

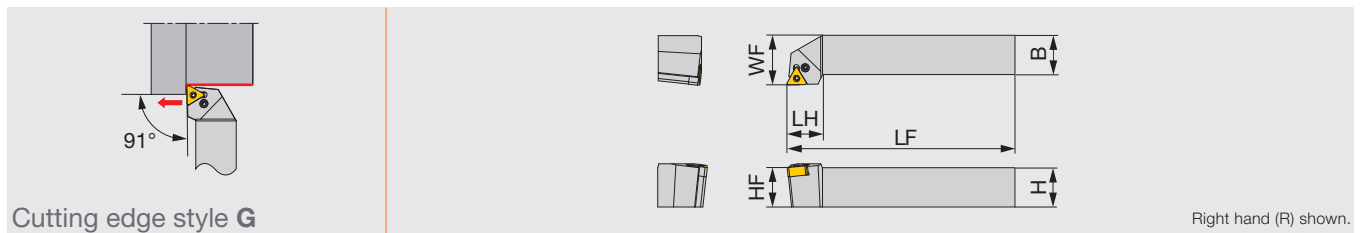
\*\*RE: The holder measurements are true with this insert radius

### SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PVVNN**1204	LSV212	LCS3V	P-2.5	LSP3	LCL3V

## PTGNR/L-Eco

Lever-lock toolholder with 91° approach angle, for negative triangular inserts



Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PTGNR/L2020K1104	20	20	125	20	20	25	0.8	TN**1104...	2
PTGNR/L2525M1104	25	25	150	20	25	32	0.8	TN**1104...	2

\*Torque: Recommended torque (N-m) for clamping

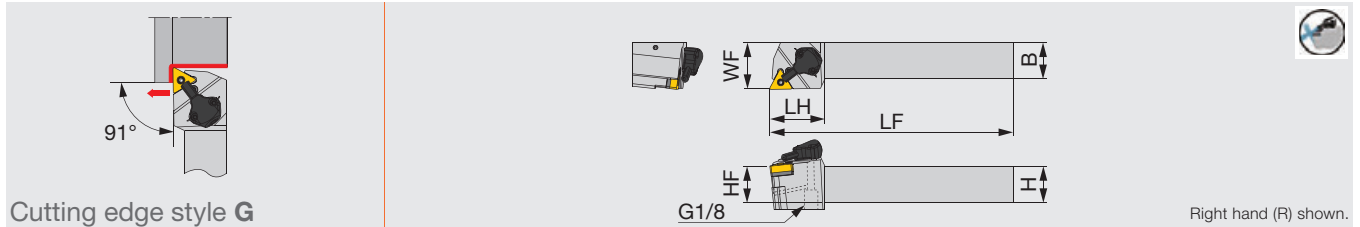
\*\*RE: The holder measurements are true with this insert radius

### SPARE PARTS

Designation	Clamping screw	Wrench	Lever
PTGNR/L**1104	LCS23A	P-2.5	LCL23

## TUNGTURN PTGNR/L-CHP

Lever-lock toolholders with 91° approach angle, for negative 60° triangular inserts, with high pressure coolant capability



Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PTGNR/L2020K1104-CHP	20	20	125	38	20	32	0.8	TN**1104...	2
PTGNR/L2525M1104-CHP	25	25	150	38	25	32	0.8	TN**1104...	2

\*Torque: Recommended torque (N·m) for clamping

\*\*RE: The holder measurements are true with this insert radius

### SPARE PARTS

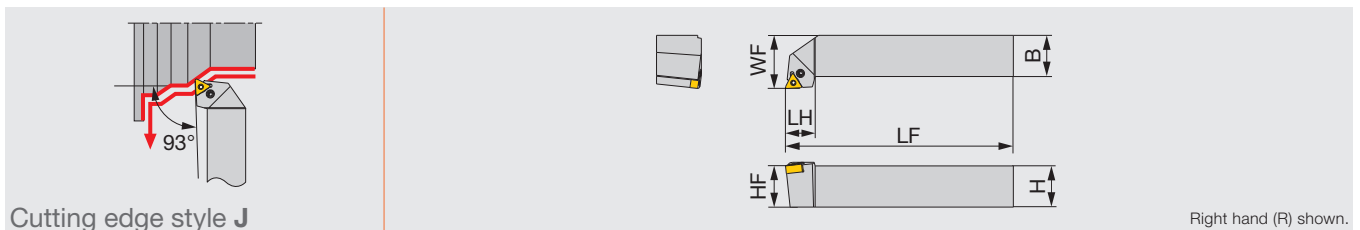
Designation	Shim	Clamping screw	Wrench 1	Spring pin	Lever
PTGNR/L**1104-CHP	-	LCS23A	P-2.5	LSP3	LCL23

### SPARE PARTS

Designation	Coolant unit	Mounting screw	Wrench 2	O-ring	Coolant screw	Wrench 3
PTGNR/L**1104-CHP	CU-CW-CHP	SRM3	T-8F	OR6.4X0.9N	SRM4X4TL360	P-2

## PTJNR/L-Eco

Lever-lock toolholder with 93° approach angle, for negative triangular inserts



Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PTJNR/L2525M1104	25	25	150	18	25	32	0.8	TN**1104...	2

\*Torque: Recommended torque (N·m) for clamping

\*\*RE: The holder measurements are true with this insert radius

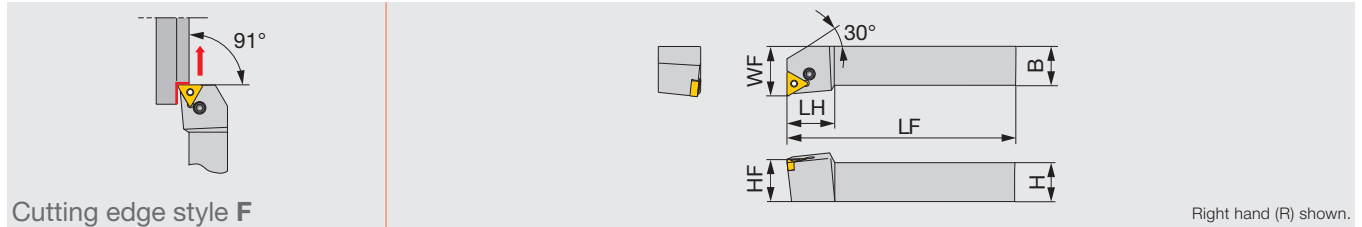
### SPARE PARTS

Designation	Clamping screw	Wrench	Lever
PTJNR/L2525M1104	LCS23A	P-2.5	LCL23



## PTFNR/L-Eco

Lever-lock toolholder with 91° approach angle, for negative triangular inserts



Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PTFNR/L2020K1104	20	20	125	16	20	25	0.8	TN**1104...	2
PTFNR/L2525M1104	25	25	150	22	25	32	0.8	TN**1104...	2

\*Torque: Recommended torque (N·m) for clamping

\*\*RE: The holder measurements are true with this insert radius

### SPARE PARTS

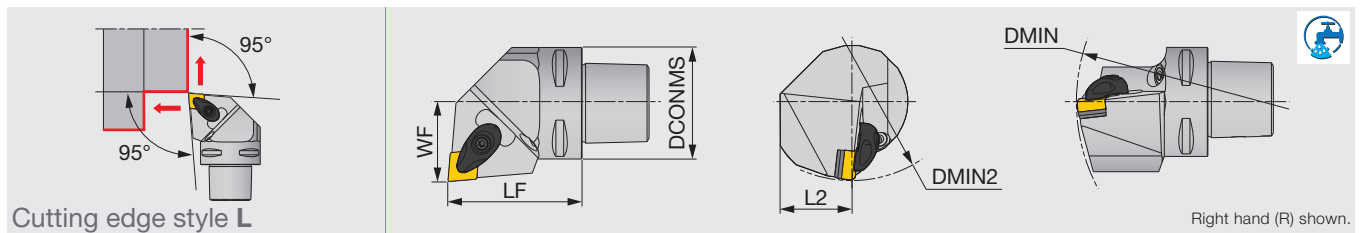
Designation	Clamping screw	Wrench	Lever
PTFNR/L**1104	LCS23A	P-2.5	LCL23

## TURNINGA

### C-ACLN/L

## TUNGCAP

Double-clamp toolholder, with 95° approach angle, for negative 80° rhombic inserts (TurningA)



Designation	DCONMS	LF	L2	WF	DMIN	DMIN2	RE**	Insert
C3ACLN/L22040-0904N	32	40	20	22	110	121	0.8	CN**0904**E
C4ACLN/L27050-0904N	40	50	25	27	140	110	0.8	CN**0904**E
C6ACLN/L45065-0904N	63	65	35	45	190	110	0.8	CN**0904**E

\*\*RE: The holder measurements are true with this insert radius

Applicable for 7 MPa coolant

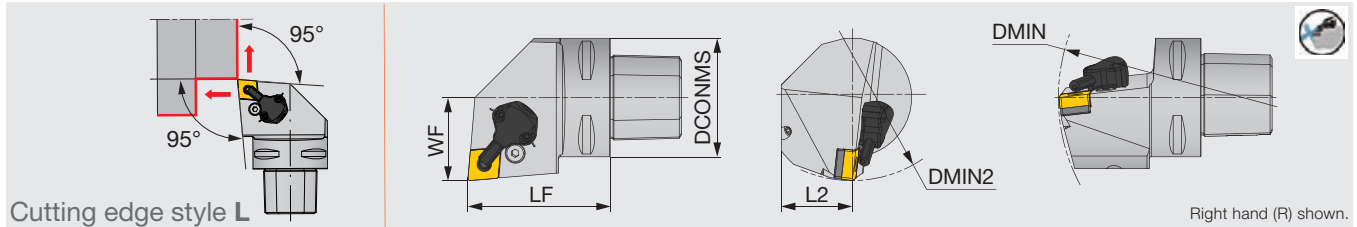
### SPARE PARTS

Designation	Clamp	Clamp screw	Coolant parts	Shim	Shim screw	Spring	Spring pin	Wrench
C*ACLN**-0904N	ACP3S-E	ACS-5W	SATZ-M10X1-5	ASC322	CSTB-3.5	BP-7	SP-2.5	T-15F

## TUNG<sup>TURN</sup>TJET C-PCLNR/L-CHP

## TUNGCAP

Lever-lock toolholder with TungCap connection, for negative 80° rhombic inserts, with high pressure coolant capability



Designation	DCONMS	LF	L2	WF	DMIN	DMIN2	RE**	Insert
C4PCLNR/L27050-0904-CHP	40	50	25	27	140	110	0.8	CN**0904...
C6PCLNR/L45065-0904-CHP	63	65	41	45	190	125	0.8	CN**0904...

\*\*RE: The holder measurements are true with this insert radius  
Applicable for 14 MPa coolant

### SPARE PARTS

Designation	Shim	Clamping screw	Wrench 1	Spring pin	Lever
C*PCLNR/L**0904-CHP	LSC317	LCS3	P-2.5	LSP3	LCL33

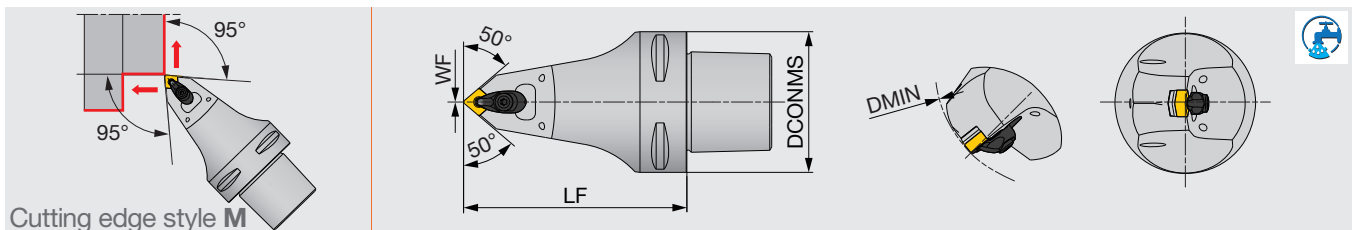
### SPARE PARTS

Designation	Coolant unit	Mounting screw	Wrench 2	O-ring
C*PCLNR/L*-CHP	CU-CW-CHP	SRM3	T-8F	OR6.4X0.9N

## TURNING<sup>A</sup> C-ACMNN

## TUNGCAP

Double-clamp toolholder, with 50° approach angle, for negative 80° rhombic inserts



Designation	DCONMS	LF	WF	DMIN	RE**	Insert
C6ACMNN00100-0904N	63	100	0	110	0.8	CN**0904**E
C6ACMNN00140-0904N	63	140	0	110	0.8	CN**0904**E

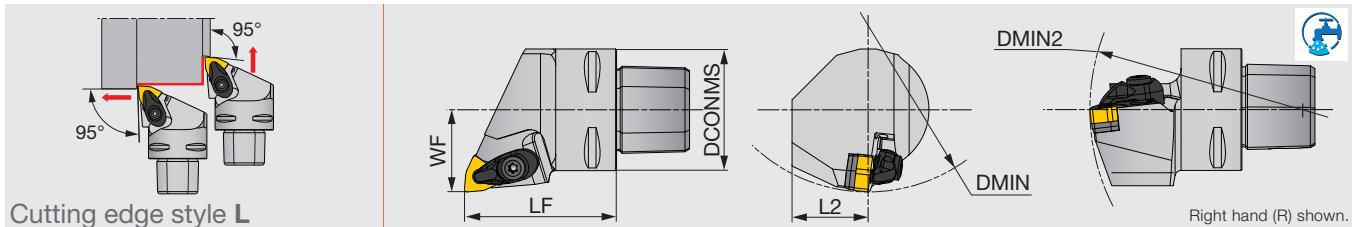
\*\*RE: The holder measurements are true with this insert radius  
Applicable for 7 MPa coolant

### SPARE PARTS

Designation	Clamp	Clamp screw	Shim	Shim screw	Spring	Spring pin	Wrench
C6ACMNN001**-0904N	ACP3S-E	ACS-5W	ACS322	CSTB-3.5	BP-7	SP-2.5	T-15F

## C-AWLNR/L

Double-clamp toolholder, with 95° approach angle, for negative 80° trigon inserts (TurningA)



Designation	DCONMS	LF	L2	WF	DMIN	DMIN2	RE**	Insert
C4AWLNR/L27050-0604N	40	50	25	27	140	110	0.8	WN**0604...

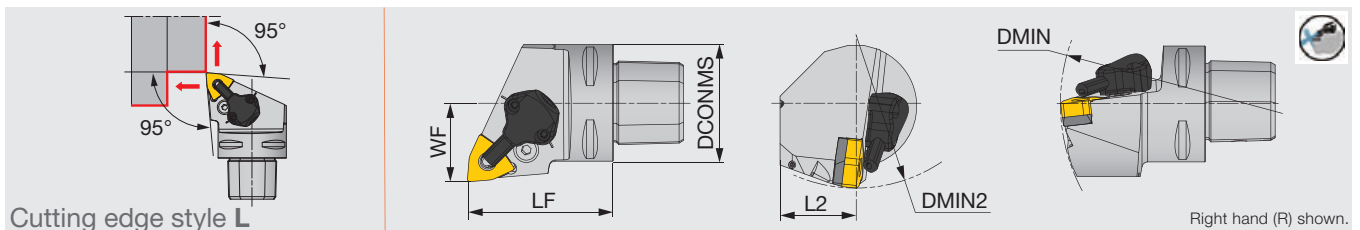
\*\*RE: The holder measurements are true with this insert radius  
Applicable for 7 MPa coolant

### SPARE PARTS

Designation	Clamp	Clamp screw	Shim	Shim screw	Spring	Spring pin	Wrench
C4AWLNR/L27050-0604N	ACP4S	ACS-5W	ASW422	CSTB-3.5	BP-7	SP-2.5	T-15F

## C-PWLNR/L-CHP

Lever-lock toolholder with TungCap connection, for negative 80° trigon inserts, with high pressure coolant capability



Designation	DCONMS	LF	L2	WF	DMIN	DMIN2	RE**	Insert
C4PWLNR/L27050-0604-CHP	40	50	25	27	140	110	0.8	WN**0604...

\*\*RE: The holder measurements are true with this insert radius  
Applicable for 14 MPa coolant

### SPARE PARTS

Designation	Shim	Clamping screw	Wrench 1	Spring pin	Lever
C*PWLNR/L**0604-CHP	LSW312	LCS3	P-2.5	LSP3	LCL3

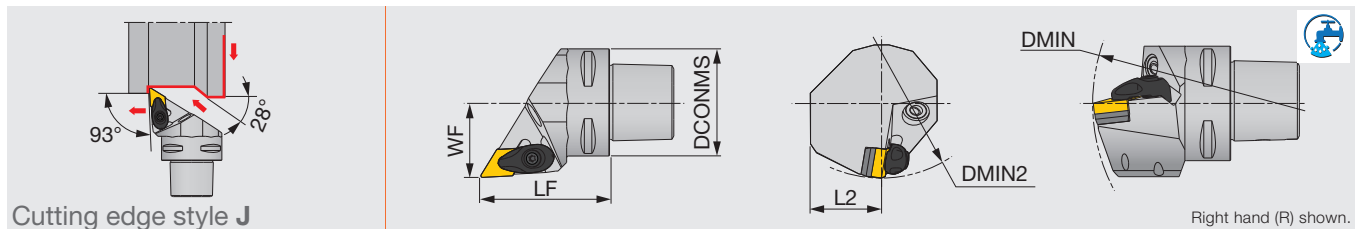
### SPARE PARTS

Designation	Coolant unit	Mounting screw	Wrench 2	O-ring
C*PWLNR/L*-CHP	CU-CW-CHP	SRM3	T-8F	OR6.4X0.9N

## TURNINGA

### C-ADJNR/L

Double-clamp toolholder, with 93° approach angle, for negative 55° rhombic inserts (TurningA)



Designation	DCONMS	LF	L2	WF	DMIN	DMIN2	RE**	Insert
C3ADJNR/L22050-1104N	32	50	20	22	121	85	0.8	DN**1104...
C4ADJNR/L27050-1104N	40	50	25	27	145	110	0.8	DN**1104...
C6ADJNR/L45065-1104N	63	65	35	45	190	110	0.8	DN**1104...

\*\*RE: The holder measurements are true with this insert radius  
Applicable for 7 MPa coolant

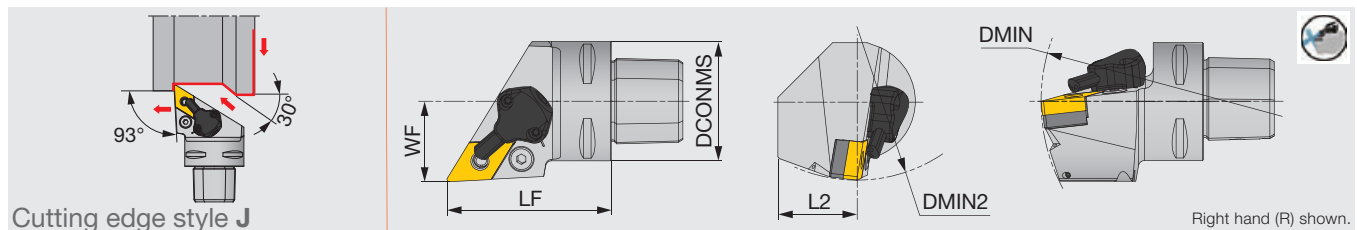
#### SPARE PARTS

Designation	Clamp	Clamp screw	Coolant parts	Shim	Shim screw	Spring	Spring pin	Wrench
C*ADJNR/L**1104N	ACP3S-E	ACS-5W	SATZ-M10X1-M5	ASD322	CSTB-3.5	BP-7	SP-2.5	T-15F

## TUNG<sup>TURN</sup>TJET

### C-PDJNR/L-CHP

Lever-lock toolholder with TungCap connection, for negative 55° rhombic inserts, with high pressure coolant capability



Designation	DCONMS	LF	L2	WF	DMIN	DMIN2	RE**	Insert
C4PDJNR/L27055-1104-CHP	40	55	25	27	140	110	0.8	DN**1104...
C6PDJNR/L45065-1104-CHP	63	65	41	45	190	110	0.8	DN**1104...

\*\*RE: The holder measurements are true with this insert radius  
Applicable for 14 MPa coolant

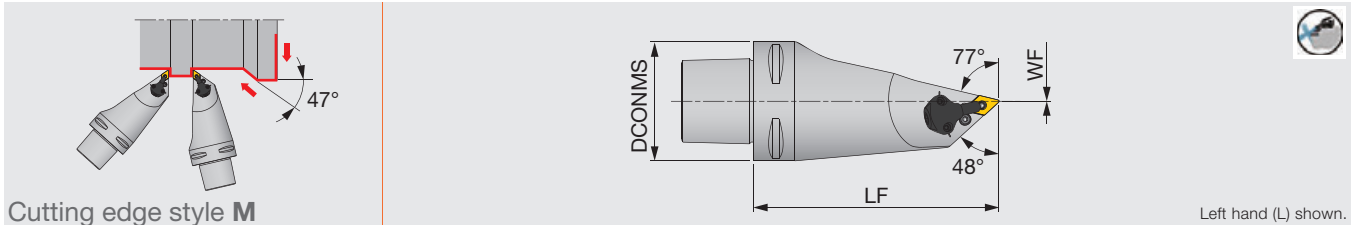
#### SPARE PARTS

Designation	Shim	Clamping screw	Wrench 1	Spring pin	Lever
C*PDJNR/L**1104-CHP	ELSD32	LCS3	P-2.5	LSP3	LCL33L

#### SPARE PARTS

Designation	Coolant unit	Mounting screw	Wrench 2	O-ring
C*PDJLNR/L**CHP	CU-D-CHP	SRM3	T-8F	OR6.4X0.9N

Lever-lock toolholder with TungCap connection, for negative 55° rhombic inserts, with high pressure coolant capability



Left hand (L) shown.

Designation	DCONMS	LF	WF	RE**	Insert
C6PDMNL00130-1104-CHP	63	130	0	0.8	DN**1104...

\*\*RE: The holder measurements are true with this insert radius  
Applicable for 14 MPa coolant

Cannot be used for boring.

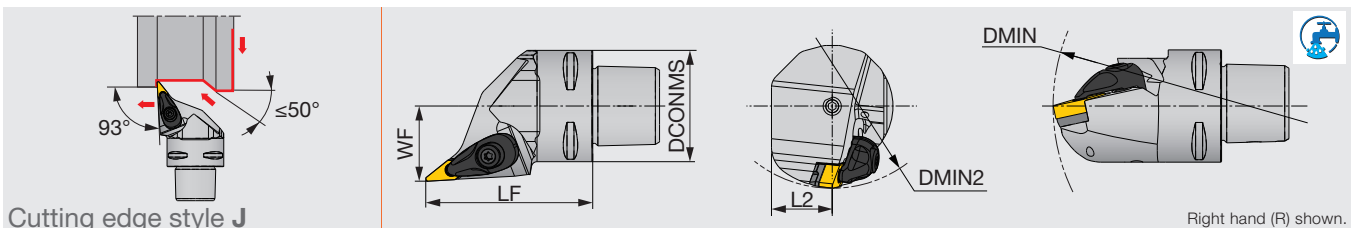
**SPARE PARTS**

Designation	Shim	Clamping screw	Wrench 1	Spring pin	Lever
C6PDMNL00130-1104-CHP	ELSD32	LCS3	P-2.5	LSP3	LCL33L

**SPARE PARTS**

Designation	Coolant unit	Mounting screw	Wrench 2	O-ring
C6PDMNL00130-1104-CHP	CU-D-CHP	SRM3	T-8F	OR6.4X0.9N

Double-clamp toolholder, with 93° approach angle, for negative 35° rhombic inserts (TurningA)



Right hand (R) shown.

Designation	DCONMS	LF	L2	WF	DMIN	DMIN2	RE**	Insert
C4AVJNR/L27060-1204N	40	60	20	27	140	55	0.8	VN**1204...
C6AVJNR/L45065-1204N	63	65	31.5	45	190	81	0.8	VN**1204...

\*\*RE: The holder measurements are true with this insert radius  
Applicable for 7 MPa coolant

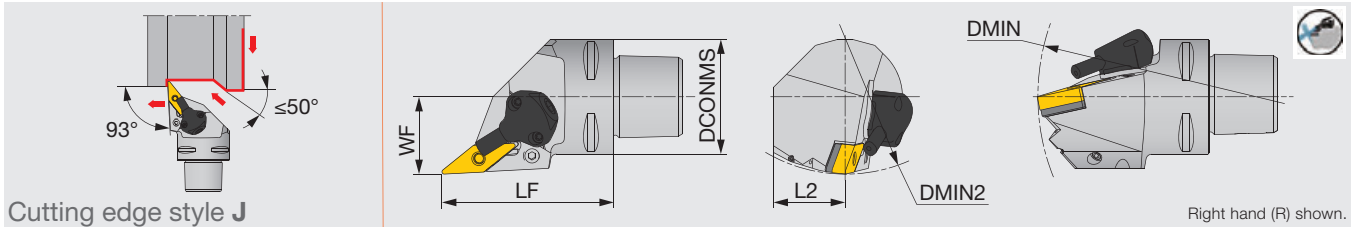
**SPARE PARTS**

Designation	Clamp	Clamp screw	Coolant parts	Shim	Shim screw	Spring	Spring pin	Wrench 1	Wrench 2
C4AVJNR/L...	ACP3L-E	ACS-5W	-	ASV222	CSTB-3	BP-7	SP-2.5	T-9F	T-15F
C6AVJNR/L...	ACP3L-E	ACS-5W	SATZ-M10X1-M5	ASV222	CSTB-3	BP-7	SP-2.5	T-9F	T-15F

## TUNG<sup>TURN</sup>TJET C-PVJNR/L-CHP

## TUNGCAP

Lever-lock toolholder with TungCap connection, with 93° approach angle, for negative 35° rhombic inserts, with high pressure coolant capability



Designation	DCONMS	LF	L2	WF	DMIN	DMIN2	RE**	Insert
C4PVJNR/L27060-1204-CHP	40	60	20	27	140	90	0.8	VN**1204...
C6PVJNR/L45065-1204-CHP	63	65	31.5	45	190	81	0.8	VN**1204...

\*\*RE: The holder measurements are true with this insert radius  
Applicable for 14 MPa coolant

### SPARE PARTS

Designation	Shim	Clamping screw	Wrench 1	Wrench 2	Spring pin	Lever
C*PVJNR/L**-1204-CHP	LSV212	LCS3V	P-2.5	P-3	LSP3	LCL3V

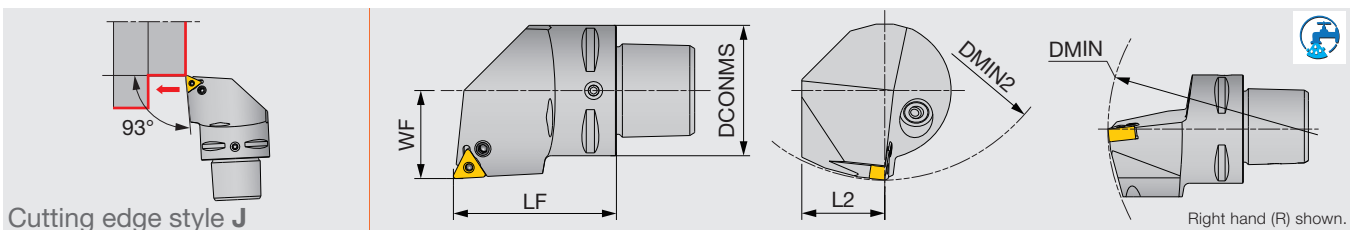
### SPARE PARTS

Designation	Coolant unit	Mounting screw	Wrench 2	O-ring
C*PVJNR/L**-CHP	CU-V-CHP	SRM3	T-8F	OR6.4X0.9N

## TUNGCAP

## C-PTJNR/L

Lever-lock external turning toolholder (P type)



Designation	DCONMS	LF	L2	WF	DMIN	DMIN2	RE**	Insert
C4PTJNR/L27050-1104N	40	50	25	27	140	110	0.8	TN**1104**E

\*\*RE: The holder measurements are true with this insert radius  
Applicable for 7 MPa coolant

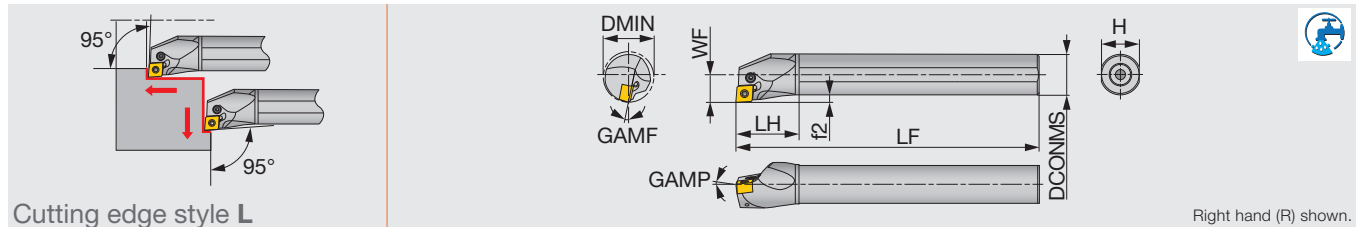
### SPARE PARTS

Designation	Coolant parts	Lever	Clamping screw	Wrench
C4PTJNR/L27050-1104N	SATZ-M8X1-M3	LCL23	LCS23A	P-2.5

# Internal toolholders

## A-PCLNR/L-Eco

Lever-lock boring bar, for negative 80° rhombic inserts



Designation	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A16M-PCLNR/L0904-D200	Steel	20	16	11	150	32	15	3	-6°	-16°	0.8	CN**0904...	1.7
A20Q-PCLNR/L0904-D250	Steel	25	20	13	180	36	18	3	-6°	-12°	0.8	CN**0904...	1.7

\*Torque: Recommended torque (N·m) for clamping

\*\*RE: The holder measurements are true with this insert radius

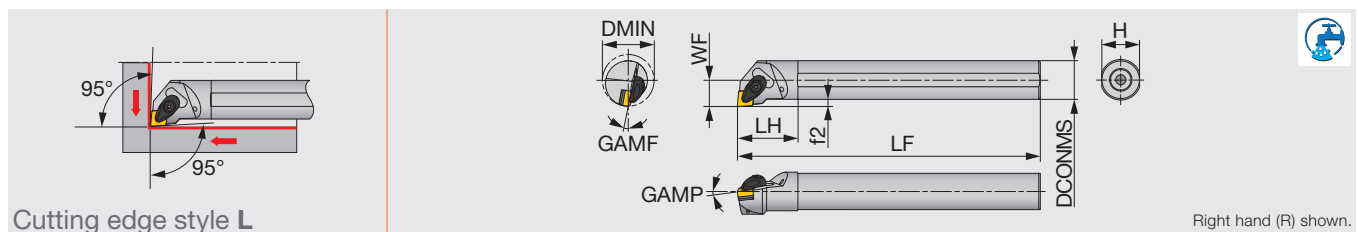
### SPARE PARTS

Designation	Clamping screw	Wrench	Lever	Oil supply attachment*	Screw for oil hole*
A16M-PCLNR/L0904-D200	LCS33	P-2F	LCL33N	-	SSHM3-4
A20Q-PCLNR/L0904-D250	LCS33	P-2F	LCL33N	EA-20	SSHM3-4

\*Optional

## A-ACLNR/L-Eco

Double-clamp boring bar, for negative 80° rhombic inserts



Designation	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A25R-ACLNR/L0904-D320	Steel	32	25	17	200	45	23	4.5	-6°	-13°	0.8	CN**0904...	3
A32S-ACLNR/L0904-D400	Steel	40	32	22	250	50	30	6	-6°	-10°	0.8	CN**0904...	3

\*Torque: Recommended torque (N·m) for clamping

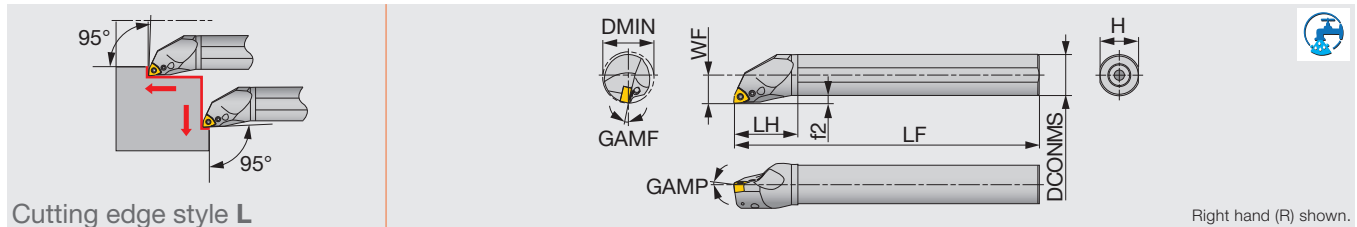
\*\*RE: The holder measurements are true with this insert radius

### SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
A**-ACLNR/L0904...	ACP3S-E	ACS-5W	BP-7	SP-2.5	ASC322	CSTB-3.5	T-15F

## A-PWLNLR/L-Eco

Lever-lock boring bar, for negative 80° trigon inserts



Designation	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A16M-PWLNLR/L0604-D200	Steel	20	16	11	150	32	15	3	-8°	-17°	0.8	WN**0604...	1.7
A20Q-PWLNLR/L0604-D250	Steel	25	20	13	180	36	18	3	-6°	-14°	0.8	WN**0604...	1.7

\*Torque: Recommended torque (N·m) for clamping

\*\*RE: The holder measurements are true with this insert radius

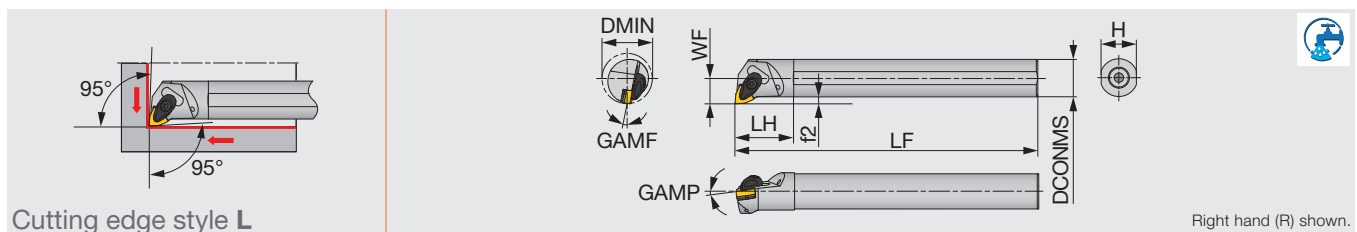
### SPARE PARTS

Designation	Clamping screw	Wrench	Lever	Oil supply attachment*	Screw for oil hole*
A16M-PWLNLR/L0604-D200	LCS33	P-2F	LCL33N	-	SSHM3-4
A20Q-PWLNLR/L0604-D250	LCS33	P-2F	LCL33N	EA-20	SSHM3-4

\*Optional

## A-AWLNLR/L-Eco

Double-clamp boring bar, for negative 80° trigon inserts



Designation	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A25R-AWLNLR/L0604-D320	Steel	32	25	17	200	45	23	4.5	-6°	-13°	0.8	WN**0604...	3
A32S-AWLNLR/L0604-D400	Steel	40	32	22	250	50	30	6	-6°	-10°	0.8	WN**0604...	3

\*Torque: Recommended torque (N·m) for clamping

\*\*RE: The holder measurements are true with this insert radius

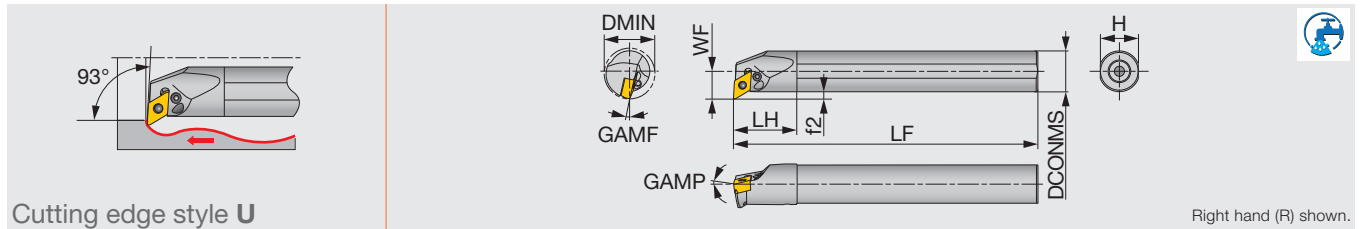
### SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
A**-AWLNLR/L...	ACP3S-E	ACS-5W	BP-7	SP-2.5	ASW322	CSTB-3.5	T-15F



## A-PDUNR/L-Eco

Lever-lock boring bar, for negative 55° rhombic inserts



Designation	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A20Q-PDUNR/L1104-D250	Steel	25	20	13	180	36	18	3	-6°	-14°	0.8	DN**1104...	1.7

\*Torque: Recommended torque (N-m) for clamping

\*\*RE: The holder measurements are true with this insert radius

Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

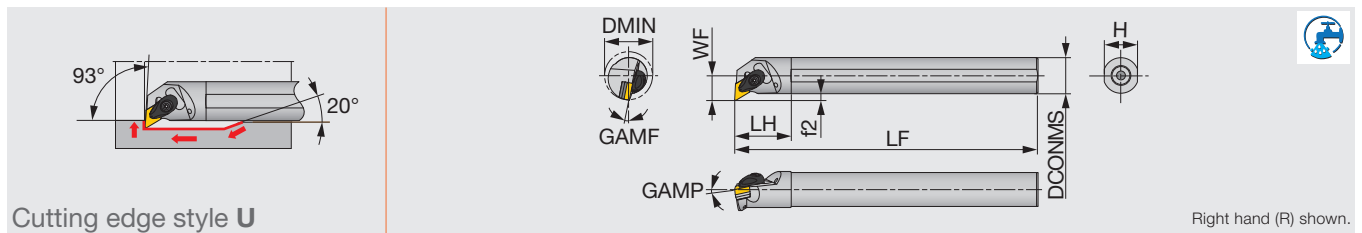
### SPARE PARTS

Designation	Clamping screw	Wrench	Lever	Oil supply attachment*	Screw for oil hole*
A20Q-PDUNR/L1104-D250	LCS22A	P-2F	LCL33NL	EA-20	SSHM2.5-3

\*Optional

## A-ADUNR/L-Eco

Double-clamp boring bar, for negative 55° rhombic inserts



Designation	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A25R-ADUNR/L1104-D320	Steel	32	25	17	200	45	23	4.5	-6°	-13°	0.8	DN**1104...	3
A32S-ADUNR/L1104-D400	Steel	40	32	22	250	50	30	6	-6°	-11°	0.8	DN**1104...	3

\*Torque: Recommended torque (N-m) for clamping

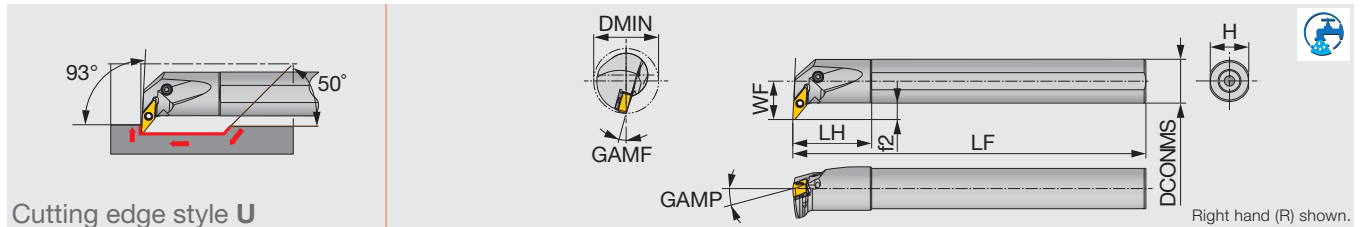
\*\*RE: The holder measurements are true with this insert radius

### SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
A*-ADUNR/L...	ACP3S-E	ACS-5W	BP-7	SP-2.5	ASD322	CSTB-3.5	T-15F

## A-PVUNR/L-Eco

Lever-lock boring bar, for negative 35° rhombic inserts



Designation	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A25R-PVUNR/L1204-D320	Steel	32	25	18	200	45	23	5.0	-5°	-15°	0.8	VN**1204...	3
A25R-PVUNR/L1204-D370	Steel	37	25	22	200	45	23	8.0	-4°	-15°	0.8	VN**1204...	3
A32S-PVUNR/L1204-D400	Steel	40	32	22	250	50	30	5.5	-6°	-12°	0.8	VN**1204...	3

\*Torque: Recommended torque (N-m) for clamping

\*\*RE: The holder measurements are true with this insert radius

### SPARE PARTS

Designation	Clamping screw	Wrench	Lever	Shim	Spring pin	Oil supply attachment*	Screw for oil hole*
A25R-PVUNR/L1204-D...	LCS3V	P-2.5	LCL3V	LSV212	LSP3	EA-25	SSHM4-5
A32S-PVUNR/L1204-D400	LCS3V	P-2.5	LCL3V	LSV212	LSP3	EA-32	SSHM4-5

\*Optional

## Economical sized insert bring benefits in small diameter ID Turning

- The new VNMG1204 insert combined with a P-type holder can turn and profile an inner diameter as small as  $\varnothing 32$  mm.

### A25R-PVUNR/L1204-D320



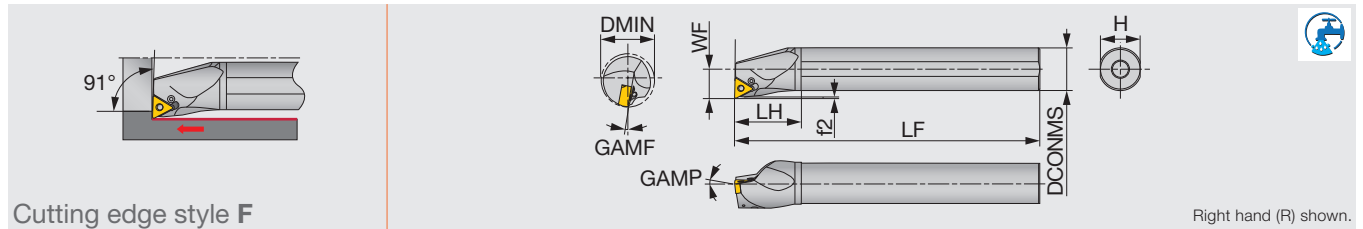
- ISO-EcoTurn also offers a holder line for a minimum working diameter of  $\varnothing 37$  mm with VNMG1204 insert. This holder makes an excellent alternative to a standard holder with VNMG1604 insert, whose minimum working diameter is also  $\varnothing 37$  mm.

### A25R-PVUNR/L1204-D370



## A-PTFNR/L-Eco

Lever-lock boring bar, for negative triangular inserts



Cutting edge style F

Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A25R-PTFNR/L1104-D320	Steel	32	25	17	200	45	23	1.31	-6°	-12°	0.8	TN**1104...	2
A32S-PTFNR/L1104-D400	Steel	40	32	22	250	50	30	1.25	-6°	-10°	0.8	TN**1104...	2

\*Torque: Recommended torque (N-m) for clamping

\*\*RE: The holder measurements are true with this insert radius

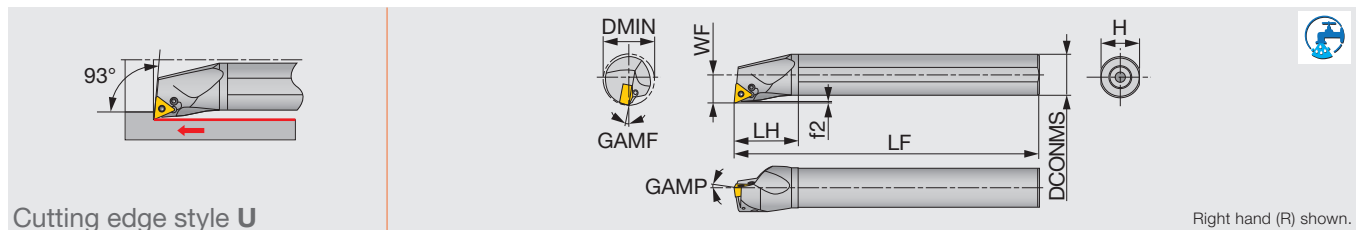
### SPARE PARTS

Designation	Clamping screw	Wrench	Lever	Oil supply attachment*	Screw for oil hole*
A25R-PTFNR/L...	LCS23A	P-2.5	LCL23	EA-25	SSHM4-5
A32S-PTFNR/L...	LCS23A	P-2.5	LCL23	EA-32	SSHM4-5

\*Optional

## A-PTUNR/L-Eco

Lever-lock boring bar, for negative triangular inserts



Cutting edge style U

Right hand (R) shown.

Designation	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A25R-PTUNR/L1104-D320	Steel	32	25	17	200	45	23	1.22	-6°	-12°	0.8	TN**1104...	2
A32S-PTUNR/L1104-D400	Steel	40	32	22	250	50	30	1.16	-6°	-10°	0.8	TN**1104...	2

\*Torque: Recommended torque (N-m) for clamping

\*\*RE: The holder measurements are true with this insert radius

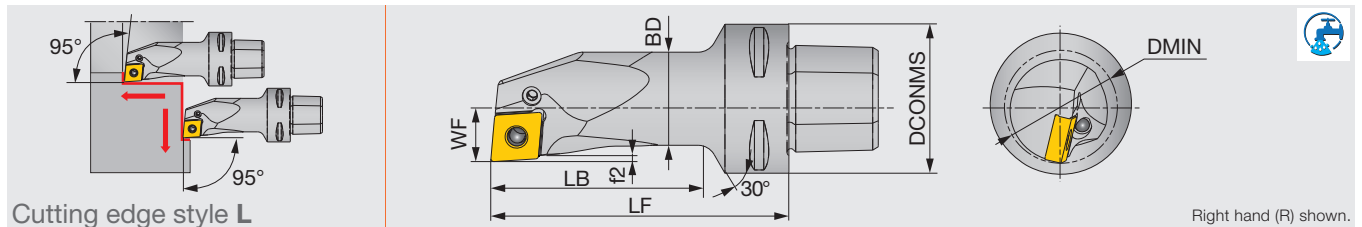
### SPARE PARTS

Designation	Clamping screw	Wrench	Lever	Oil supply attachment*	Screw for oil hole*
A25R-PTUNR/L1104-D320	LCS23A	P-2.5	LCL23	EA-25	SSHM4-5
A32S-PTUNR/L1104-D400	LCS23A	P-2.5	LCL23	EA-32	SSHM4-5

\*Optional

### C-PCLNR/L-IN

Lever-lock boring bar, for negative 80° rhombic inserts



Designation	DMIN	DCONMS	BD	LB	LF	WF	f2	RE**	Insert
C4PCLNR17090-0904	32	40	25	90	63	17	1.3	0.8	CN**0904**E
C4PCLNR22110-0904	40	40	32	110	86.5	22	1.3	0.8	CN**0904**E
C4PCLNR27120-0904	50	40	39.5	120	100	27	1.7	0.8	CN**0904**E

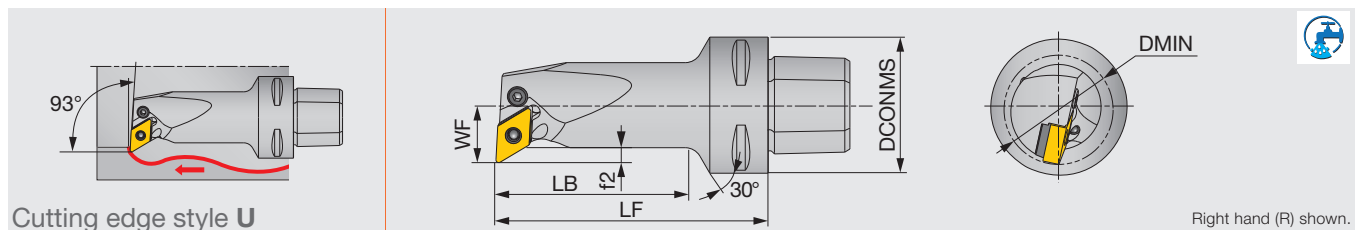
\*\*RE: The holder measurements are true with this insert radius  
Applicable for 10 MPa coolant

#### SPARE PARTS

Designation	Lever	Clamping screw	Wrench
C*PCLNR/L...	LCL43N	LCS43	P-2.5

### C-PDUNR/L

Lever-lock boring bar, for negative 55° rhombic inserts



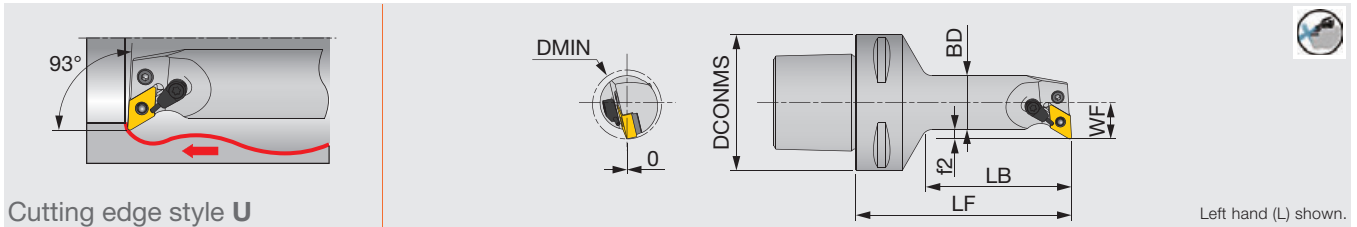
Designation	DMIN	DCONMS	LF	LB	WF	f2	RE**	Insert
C4PDUNR/L17080-11	32	40	80	58.5	17	4.4	0.8	DN**1104...

\*\*RE: The holder measurements are true with this insert radius  
Applicable for 10 MPa coolant

#### SPARE PARTS

Designation	Lever	Clamping screw	Shim	Spring pin	Wrench
C4PDUNR17080-11	LCL33L	LCS3	ELSD317BR	LSP3	P-2.5
C4PDUNL17080-11	LCL33L	LCS3	ELSD317BL	LSP3	P-2.5

Lever-lock boring bar with TungCap connection, with 93° approach angle, for negative 55° rhombic inserts, with high pressure coolant capability



Left hand (L) shown.

Designation	DMIN	DCONMS	BD	LF	LB	WF	f2	RE**	Insert
C6PDUNL17100-1104-CHP	32	63	25	100	67.5	17	4.5	0.8	DN**1104...

\*\*RE: The holder measurements are true with this insert radius  
Applicable for 14 MPa coolant

**SPARE PARTS**

Designation	Shim	Clamping screw	Coolant unit	Wrench	Spring pin	Lever
C6PDUNL17100-1104-CHP	ELSD317BL	LCS43	S-CU-CHP	P-2.5	LSP3	LCL33L

## STANDARD CUTTING CONDITIONS



Steel

Application	Chipbreaker	Grades	Cutting speed $V_c$ (m/min)			Depth of cut $a_p$ (mm)	Feed $f$ (mm/rev)
			Low carbon steels Alloy steels	Medium carbon steels Alloy steels	High carbon steels Alloy steels		
Precision finishing	TF	T9215	150 - 400	150 - 400	120 - 300	0.1 - 0.5	0.03 - 0.15
		T9225	120 - 300	120 - 300	100 - 250		
Finishing	TSF	NS9530	150 - 250	80 - 220	80 - 180	0.2 - 1.5	0.08 - 0.4
		GT9530	150 - 300	80 - 250	80 - 200		
		AT9530	150 - 300	80 - 250	80 - 200		
	ZF	T9215	150 - 400	150 - 400	120 - 300		
		T9225	120 - 300	120 - 300	100 - 250		
		T9215	150 - 400	150 - 400	120 - 300		
Finishing (Wiper)	FW	T9205	180 - 400	180 - 400	150 - 350	0.2 - 1.5	0.08 - 0.4
		T9215	150 - 400	150 - 400	120 - 300		
		T9225	120 - 300	120 - 300	100 - 250	0.5 - 1.5	0.2 - 0.4
		NS9530	150 - 250	80 - 220	80 - 180		
Finishing to medium cutting	ZM	T9215	150 - 400	150 - 400	120 - 300	0.7 - 2.0	0.15 - 0.4
		T9225	120 - 300	120 - 300	100 - 250		
Finishing to medium cutting (Wiper)	SW	T9205	180 - 400	180 - 400	150 - 350	0.5 - 2.0	0.3 - 0.6
		T9215	150 - 400	150 - 400	120 - 300		
		T9225	120 - 300	120 - 300	100 - 250		
Finishing to medium cutting	NM	T9225	120 - 300	120 - 300	100 - 250	0.5 - 2.0	0.15 - 0.4
Medium cutting	TM	T9215	150 - 400	150 - 400	120 - 300	1.0 - 3.0	0.2 - 0.5
		T9225	120 - 300	120 - 300	100 - 250		



Stainless

Application	Chipbreaker	Grades	Cutting speed $V_c$ (m/min)			Depth of cut $a_p$ (mm)	Feed $f$ (mm/rev)
			Austenitic	Ferritic / Martensitic	Precipitation hardened		
Finishing	SS	AH630	90 - 190	110 - 210	60 - 90	0.5 - 3.0	0.08 - 0.2
		AH645	70 - 150	90 - 170	-		
Medium cutting	SM	T6120	140 - 240	160 - 280	80 - 150	1.0 - 3.0	0.2 - 0.5
		T6130	100 - 200	120 - 240	70 - 110		
		AH630	90 - 190	110 - 210	60 - 90		



Cast Iron



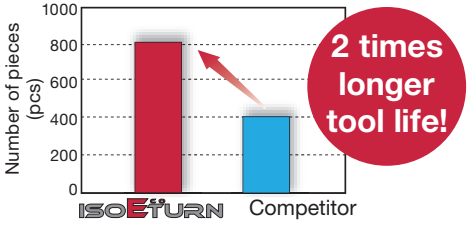
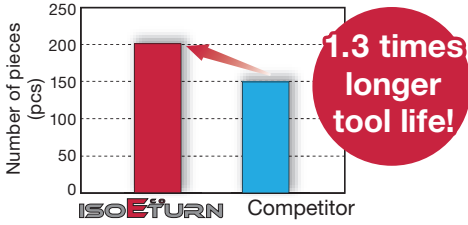
Application	Chipbreaker	Grades	Cutting speed $V_c$ (m/min)		Depth of cut $a_p$ (mm)	Feed $f$ (mm/rev)
			Grey cast irons	Ductile cast irons		
Finishing to medium cutting (Wiper)	SW	T5115	140 - 400	140 - 370	0.5 - 2.0	0.3 - 0.6
Medium cutting	TM	T515	150 - 700	140 - 370	1.0 - 3.0	0.2 - 0.5



Superalloys  
and titanium

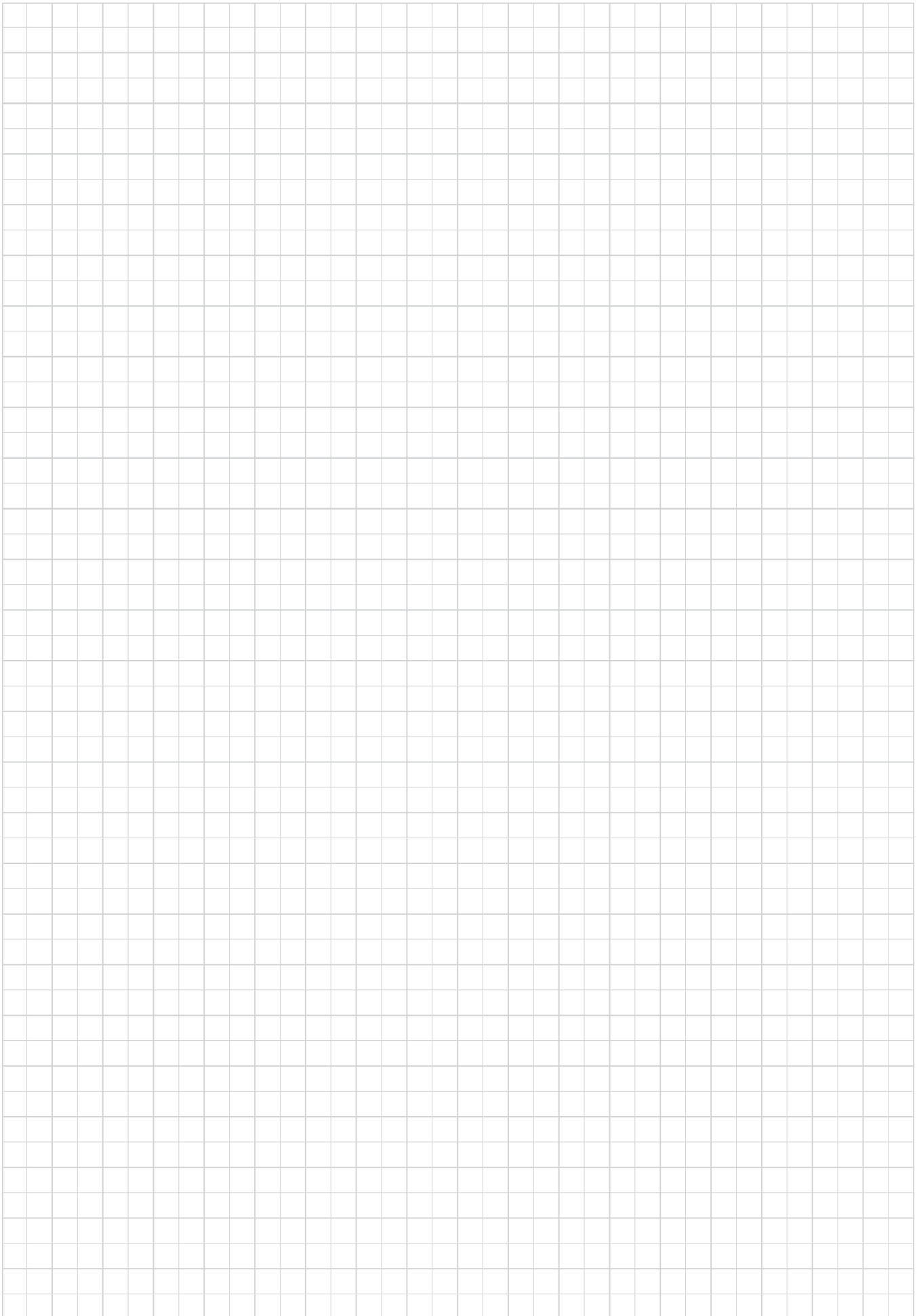
Application	Chipbreaker	Grades	Cutting speed $V_c$ (m/min)		Depth of cut $a_p$ (mm)	Feed $f$ (mm/rev)
			Titanium alloys	Ni-base alloys		
Medium cutting	TM	AH8015	20 - 150	20 - 100	1.0 - 3.0	0.2 - 0.5

## PRACTICAL EXAMPLES

Workpiece type		Machine part	Shaft
Toolholder		AWLNR2525M0604-A	ADJNR2525M1104-A
Insert		WNMG060408E-TM	DNMG110408E-TSF
Grade		T9215	T9215
Workpiece material		SCM415	S45C / C45
		 <b>P</b>	 <b>P</b>
Cutting conditions	Cutting speed: $V_c$ (m/min)	240	260
	Feed : $f$ (mm/rev)	0.1 - 0.25	0.2
	Depth of cut : $a_p$ (mm)	1	1
	Machining	External face turning	External turning
	Coolant	Wet	Wet
Results		 <p><b>2 times longer tool life!</b></p>	 <p><b>1.3 times longer tool life!</b></p>
		<p>ISO-EcoTurn insert has demonstrated excellent chip control at 1 mm depth of cut. With T9215 grade, tool life has been doubled over the competitor's regular sized CNMG1204 insert.</p>	<p>ISO-EcoTurn insert in T9215 grade has increased tool life by 1.3 time over the competitor's regular sized DNMG1504 insert with added machining stability.</p>

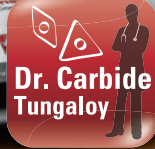
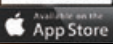
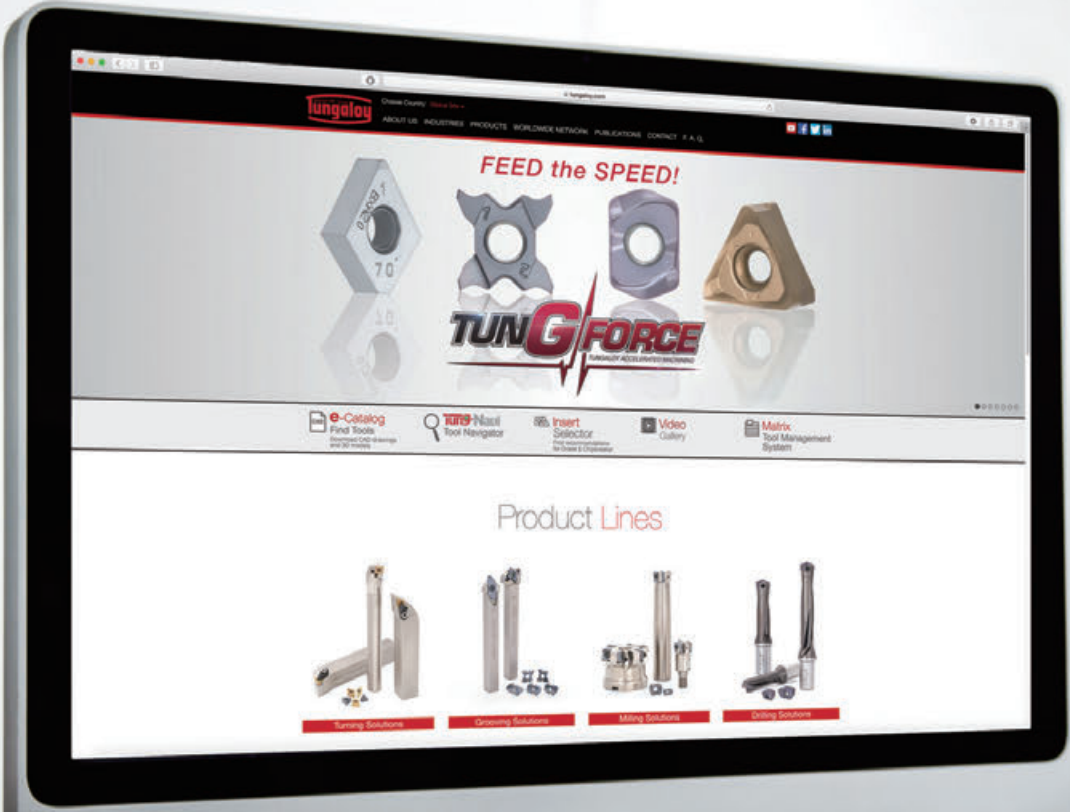


# MEMO





# Check our site and our App to get more info!



### Tungaloy Corporation (Head office)

11-1 Yoshima-Kogyodanchi  
Iwaki-city, Fukushima 970-1144 Japan  
Phone: +81-246-36-8501  
Fax: +81-246-36-8542  
www.tungaloy.co.jp

### Tungaloy America, Inc.

3726 N Ventura Drive  
Arlington Heights, IL 60004, U.S.A.  
Phone: +1-888-554-8394  
Fax: +1-888-554-8392  
www.tungaloy.com/us

### Tungaloy Canada

432 Elgin St. Unit 3  
Brantford, Ontario N3S 7P7, Canada  
Phone: +1-519-758-5779  
Fax: +1-519-758-5791  
www.tungaloy.com/ca

### Tungaloy de Mexico S.A.

C. Los Arellano 113,  
Parque Industrial Siglo XXI  
Aguascalientes, AGS, Mexico 20290  
Phone: +52-449-929-5410  
Fax: +52-449-929-5411  
www.tungaloy.com/mx

### Tungaloy do Brasil Ltda.

Avd. Independencia N4158 Residencial Flora  
13280-000 Vinhedo, São Paulo, Brasil  
Phone: +55-19-38262757  
Fax: +55-19-38262757  
www.tungaloy.com/br

### Tungaloy Germany GmbH

An der Alten Ziegelei 1  
D-40789 Monheim, Germany  
Phone: +49-2173-90420-0  
Fax: +49-2173-90420-19  
www.tungaloy.com/de

### Tungaloy France S.A.S.

ZA Courtaboeuf - Le Rio  
1 rue de la Terre de feu  
F-91952 Courtaboeuf Cedex, France  
Phone: +33-1-6486-4300  
Fax: +33-1-6907-7817  
www.tungaloy.com/fr

### Tungaloy Italia S.r.l.

Via E. Andolfato 10  
I-20126 Milano, Italy  
Phone: +39-02-252012-1  
Fax: +39-02-252012-65  
www.tungaloy.com/it

### Tungaloy Czech s.r.o.

Turanka 115  
CZ-627 00 Brno, Czech Republic  
Phone: +420-532 123 391  
Fax: +420-532 123 392  
www.tungaloy.com/cz

### Tungaloy Ibérica S.L.

C/Miquel Servet, 43B, Nau 7  
Pol. Ind. Bufalvent  
ES-08243 Manresa (BCN), Spain  
Phone: +34 93 113 1360  
Fax: +34 93 876 2798  
www.tungaloy.com/es

### Tungaloy Scandinavia AB

Bultgatan 38  
442 40 Kungälv, Sweden  
Phone: +46-462119200  
Fax: +46-462119207  
www.tungaloy.com/se

### Tungaloy Rus, LLC

Andropova avenue, h.18/7,  
11 floor, office 3, 115432,  
Moscow, Russia  
Phone: +7-499-683-01-80  
Fax: +7-499-683-01-81  
www.tungaloy.com/ru

### Tungaloy Polska Sp. z o.o.

Ul. Irysowa 1, 55-040 Bielany  
Wroclawskie, Poland  
Phone: +48 607 907 237  
www.tungaloy.com/pl

### Tungaloy U.K. Ltd

Gallan Park, Watling Street,  
Cannock, WS110XG, UK  
Phone: +44 121 4000 231  
Fax: +44 121 270 9694  
www.tungaloy.com/uk

### Tungaloy Hungary Kft

Erzsébet királyné útja 125  
H-1142 Budapest, Hungary  
Phone: +36 1 781-6846  
Fax: +36 1 781-6866  
www.tungaloy.com/hu

### Tungaloy Turkey

Serifali Mah.bayraktar Bulvari Kule Sk. No:26  
34775 Umraniye / Istanbul / Turkey  
Phone: +90 216 540 04 67  
Fax: +90 216 540 04 87  
www.tungaloy.com/tr

### Tungaloy Benelux b.v.

Tjalk 70  
NL-2411 NZ Bodegraven, Netherlands  
Phone: +31 172 630 420  
Fax: +31 172 630 429  
www.tungaloy.com/nl

### Tungaloy Croatia

Ulica bana Josipa Jelačića 87,  
10430, Samobor, Croatia  
Phone: +385 1 3326 604  
Fax: +385 1 3327 683  
www.tungaloy.com/hr

### Tungaloy Cutting Tool (Shanghai) Co.,Ltd.

Rm No 401 No.88 Zhabei  
Jiangchang No.3 Rd  
Shanghai 200436, China  
Phone: +86-21-3632-1880  
Fax: +86-21-3621-1918  
www.tungaloy.com/cn

### Tungaloy Cutting Tools (Taiwan) Co.,Ltd.

9F. No.293, Zhongyang Rd,  
Xinzhuan Dist, New Taipei City,  
24251 Taiwan  
Phone: +886-2-8521-9986  
Fax: +886-2-8521-8935  
www.tungaloy.com/tw

### Tungaloy Cutting Tools (Thailand) Co.,Ltd.

Interlink tower 4th Fl.  
1858/5-7 Bangna-Trad Road  
km.5 Bangna, Bangna, Bangkok 10260  
Thailand  
Phone: +66-2-751-5711  
Fax: +66-2-751-5715  
www.tungaloy.com/th

### Tungaloy Singapore (Pte.), Ltd.

62 Ubi Road 1, #06-11 Oxley BizHub 2  
Singapore 408734  
Phone: +65-6391-1833  
Fax: +65-6299-4557  
www.tungaloy.com/sing

### Tungaloy Vietnam

LE04.38, Lexington Residence  
67 Mai Chi Tho St., Dist. 2,  
Ho Chi Minh City, Vietnam  
Phone: +84-2837406660  
www.tungaloy.com/sing

### Tungaloy India Pvt. Ltd.

Indiabulls Finance Centre,  
Unit # 902-A, 9th Floor,  
Tower 1, Senapati Bapat Marg,  
Elphinstone Road (West),  
Mumbai-400013, India  
Phone: +91-22-6124-8804  
Fax: +91-22-6124-8899  
www.tungaloy.com/in

### Tungaloy Korea Co., Ltd

#1312, Byucksan Digital Valley 5-cha  
Beotkkot-ro 244, Geumcheon-gu  
153-788 Seoul, Korea  
Phone: +82-2-2621-6161  
Fax: +82-2-6393-8952  
www.tungaloy.com/kr

### Tungaloy Malaysia Sdn Bhd

50 K-2, Kelana Mall, Jalan SS6/14  
Kelana Jaya, 47301  
Petaling Jaya, Selangor Darul Ehsan  
Malaysia  
Phone: +603-7805-3222  
Fax: +603-7804-8563  
www.tungaloy.com/my

### Tungaloy Australia Pty Ltd

Unit 68 1470 Ferntree Gully Road  
Knoxfield 3180 Victoria, Australia  
Phone: +61-3-9755-8147  
Fax: +61-3-9755-6070  
www.tungaloy.com/au

### PT. Tungaloy Indonesia

Kompleks Grand Wisata Block AA-10 No.3-5  
Cibitung  
Bekasi 17510, Indonesia  
Phone: +62-21-8261-5808  
Fax: +62-21-8261-5809  
www.tungaloy.com/id



www.tungaloy.com

follow us at:

facebook.com/tungaloyjapan  
twitter.com/tungaloyjapan  
www.youtube.com/tungaloycorporation



AS9100 Certified  
78006  
2015.11.04  
ISO 14001 Certified  
EC97J1123  
1997.11.26

Distributed by:



FIND US ON THE CLOUD!  
machiningcloud.com







TurnLine

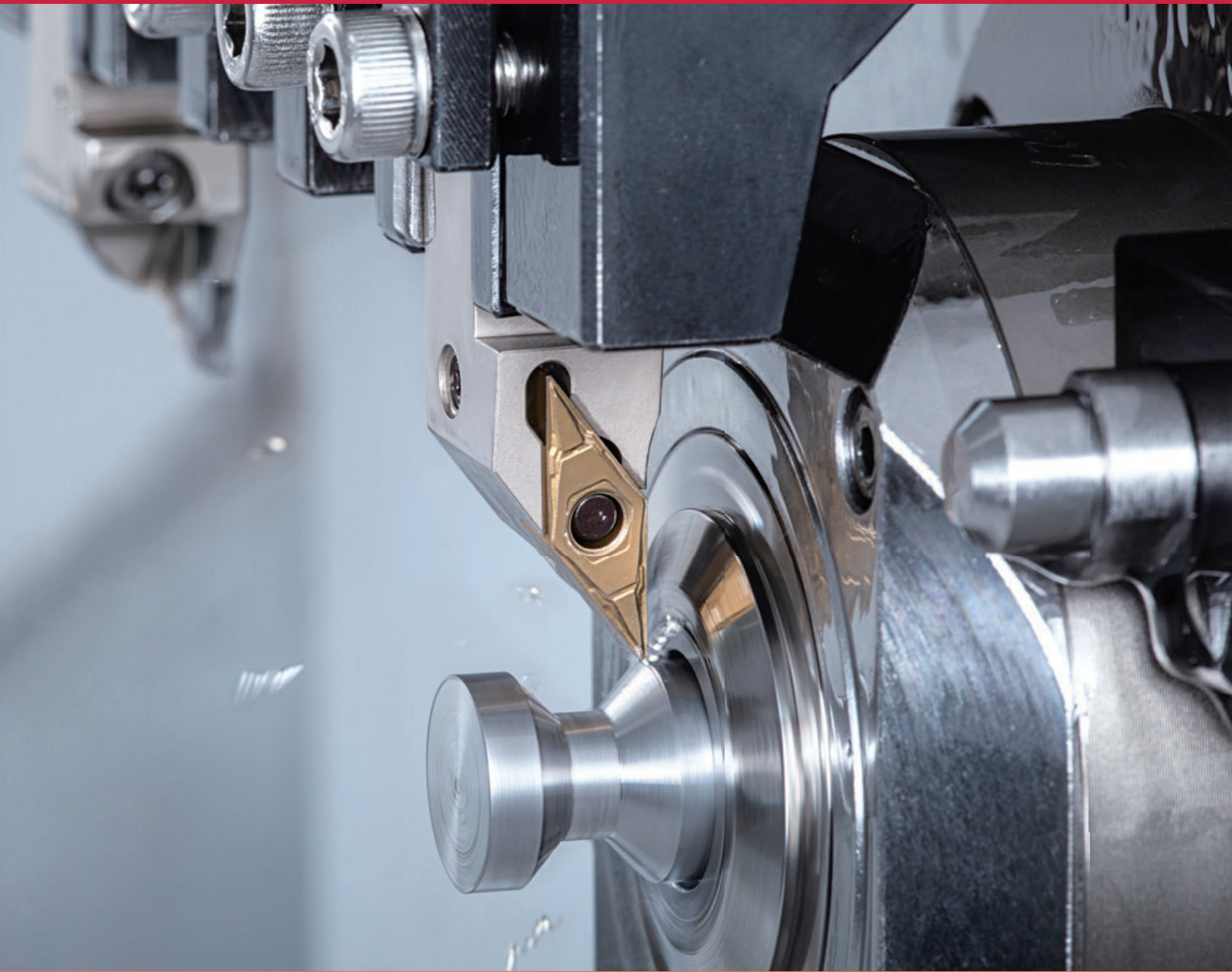
ISO<sup>CO</sup>ETURN

www.tungaloy.com

Tungaloy Report No. 426S1-G



# Latest turning toolholders with easy insert clamping system



**INDUSTRY 4.0**  
*FEED the SPEED!*



## Enables easy and quick insert exchange

### New tool holders for VNMG1204\*\*E insert



**New**

- **Machine type**  
For Swiss machines
- **Features**
  - Lever lock clamping (to be clamped from the back)
  - Without offset
  - Square shanks in sizes: 12X12 and 16X16
  - Insert: VNMG1204\*\*E

- **Machine type**  
For general CNC lathes

- **Features**
  - Standard Lever lock clamping
  - With offset
  - Square shanks in sizes: 16X16, 20X20, and 25X25
  - Insert: VNMG1204\*\*E

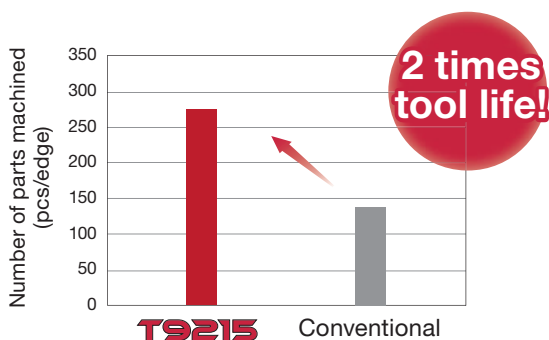
**New**



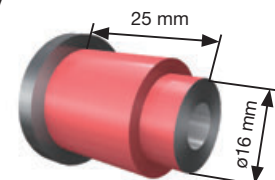
### Latest grades offer excellent cutting performance in a wide variety of applications

VNMG1204**E line up			
Material	Grade		Chipbreaker
<b>P K</b>	<b>T9215</b>	CVD coating	TF / TSF / TM
<b>P</b>	<b>T9225</b>	CVD coating	TF / TSF
<b>P</b>	<b>AT9530 / GT9530 / NS9530</b>	Coated and uncoated cermets	TSF
<b>M</b>	<b>AH630 / AH645</b>	PVD coating	SS / SM
<b>M</b>	<b>T6120 / T6130</b>	CVD coating	SS / SM

### Cutting performance

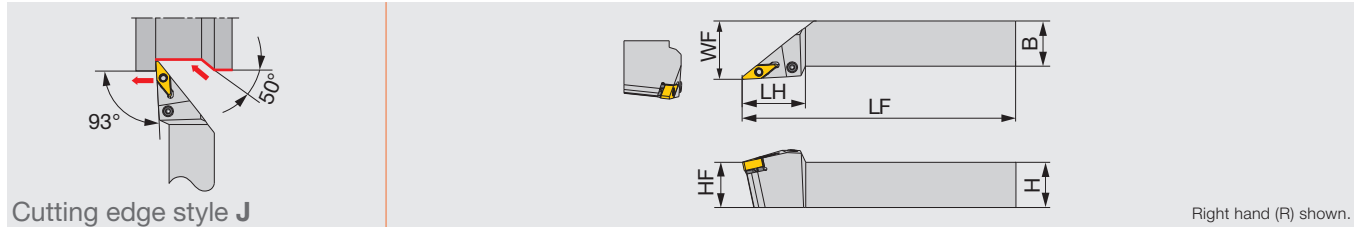


- P** Insert : VNMG120404E-TSF T9215
- Workpiece material : S45C / C45
- Cutting speed :  $V_c = 150$  m/min
- Feed :  $f = 0.1$  mm/rev
- Depth of cut :  $a_p = 0.5$  mm
- Coolant : Wet



## PVJNR/L-Eco

Lever-lock toolholder with 93° approach angle, for negative 35° rhombic inserts



Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
<b>New</b> PVJNR/L1616H1204	16	16	100	35	16	20	0.8	VN**1204...	2
PVJNR/L2020K1204	20	20	125	35	20	25	0.8	VN**1204...	2
PVJNR/L2525M1204	25	25	150	35	25	32	0.8	VN**1204...	2

\*Torque: Recommended torque (N-m) for clamping

\*\*RE: The holder measurements are true with this insert radius

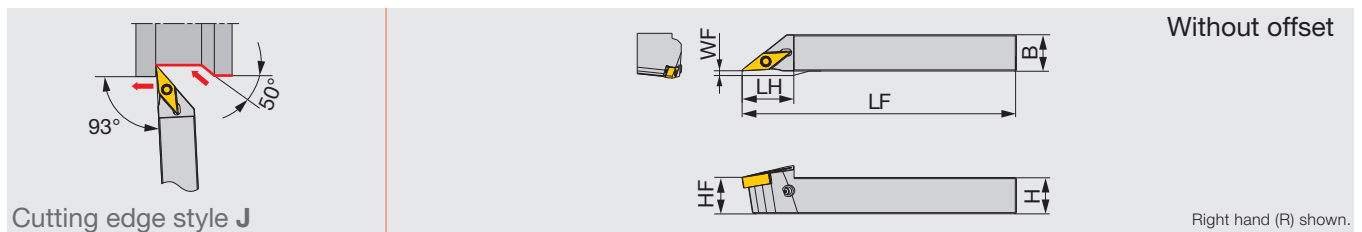
### SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PVJNR/L**1204	LSV212	LCS3V	P-2.5	LSP3	LCL3V

**New**

## JPVJ2NR/L-Eco

Back-clamp toolholder with 93° approach angle, for negative 35° rhombic inserts



Designation	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JPVJ2NR/L1212X1204	12	12	120	23	12	0	0.2	VN**1204...	0.9
JPVJ2NR/L1616X1204	16	16	120	23	16	0	0.2	VN**1204...	0.9

\*Torque: Recommended torque (N-m) for clamping

\*\*RE: The holder measurements are true with this insert radius

### SPARE PARTS

Designation	Lever	Pin	Clamping screw	Wrench
JPVJ2NR/L**1204	SLLV-4	SL-PI-2	SR10400611	HW2.0/5RED

## Tungaloy Corporation (Head office)

11-1 Yoshima-Kogyodanchi  
Iwaki-city, Fukushima 970-1144 Japan  
Phone: +81-246-36-8501  
Fax: +81-246-36-8542  
www.tungaloy.co.jp

## Tungaloy America, Inc.

3726 N Ventura Drive  
Arlington Heights, IL 60004, U.S.A.  
Phone: +1-888-554-8394  
Fax: +1-888-554-8392  
www.tungaloy.com/us

## Tungaloy Canada

432 Elgin St. Unit 3  
Brantford, Ontario N3S 7P7, Canada  
Phone: +1-519-758-5779  
Fax: +1-519-758-5791  
www.tungaloy.com/ca

## Tungaloy de Mexico S.A.

C Los Arellano 113,  
Parque Industrial Siglo XXI  
Aguascalientes, AGS, Mexico 20290  
Phone: +52-449-929-5410  
Fax: +52-449-929-5411  
www.tungaloy.com/mx

## Tungaloy do Brasil Ltda.

Avd. Independencia N4158 Residencial Flora  
13280-000 Vinhedo, São Paulo, Brasil  
Phone: +55-19-38262757  
Fax: +55-19-38262757  
www.tungaloy.com/br

## Tungaloy Germany GmbH

An der Alten Ziegelei 1  
D-40789 Monheim, Germany  
Phone: +49-2173-90420-0  
Fax: +49-2173-90420-19  
www.tungaloy.com/de

## Tungaloy France S.A.S.

ZA Courtaboef - Le Rio  
1 rue de la Terre de feu  
F-91952 Courtaboef Cedex, France  
Phone: +33-1-6486-4300  
Fax: +33-1-6907-7817  
www.tungaloy.com/fr

## Tungaloy Italia S.r.l.

Via E. Andolfato 10  
I-20126 Milano, Italy  
Phone: +39-02-252012-1  
Fax: +39-02-252012-65  
www.tungaloy.com/it

## Tungaloy Czech s.r.o.

Turanka 115  
CZ-627 00 Brno, Czech Republic  
Phone: +420-532 123 391  
Fax: +420-532 123 392  
www.tungaloy.com/cz

## Tungaloy Ibérica S.L.

C/Miquel Servet, 43B, Nau 7  
Pol. Ind. Bufalvent  
ES-08243 Manresa (BCN), Spain  
Phone: +34 93 113 1360  
Fax: +34 93 876 2798  
www.tungaloy.com/es

## Tungaloy Scandinavia AB

Bultgatan 38  
442 40 Kungälv, Sweden  
Phone: +46-462119200  
Fax: +46-462119207  
www.tungaloy.com/se

## Tungaloy Rus, LLC

Andropova avenue, h.18/7,  
11 floor, office 3, 115432,  
Moscow, Russia  
Phone: +7-499-683-01-80  
Fax: +7-499-683-01-81  
www.tungaloy.com/ru

## Tungaloy Polska Sp. z o.o.

Ul. Irysowa 1, 55-040 Bielany  
Wroclawskie, Poland  
Phone: +48 607 907 237  
www.tungaloy.com/pl

## Tungaloy U.K. Ltd

Gallan Park, Watling Street,  
Cannock, WS110XG, UK  
Phone: +44 121 4000 231  
Fax: +44 121 270 9694  
www.tungaloy.com/uk

## Tungaloy Hungary Kft

Erzsébet királyné útja 125  
H-1142 Budapest, Hungary  
Phone: +36 1 781-6846  
Fax: +36 1 781-6866  
www.tungaloy.com/hu

## Tungaloy Turkey

Serifali Mah.bayraktar Bulvari Kule Sk. No:26  
34775 Umraniye / Istanbul / Turkey  
Phone: +90 216 540 04 67  
Fax: +90 216 540 04 87  
www.tungaloy.com/tr

## Tungaloy Benelux b.v.

Tjalk 70  
NL-2411 NZ Bodegraven, Netherlands  
Phone: +31 172 630 420  
Fax: +31 172 630 429  
www.tungaloy.com/nl

## Tungaloy Croatia

Ulica bana Josipa Jelačića 87,  
10430, Samobor, Croatia  
Phone: +385 1 3326 604  
Fax: +385 1 3327 683  
www.tungaloy.com/hr

## Tungaloy Cutting Tool (Shanghai) Co.,Ltd.

Rm No 401 No.88 Zhabei  
Jiangchang No.3 Rd  
Shanghai 200436, China  
Phone: +86-21-3632-1880  
Fax: +86-21-3621-1918  
www.tungaloy.com/cn

## Tungaloy Cutting Tools (Taiwan) Co.,Ltd.

9F, No.293, Zhongyang Rd,  
Xinzhuang Dist, New Taipei City,  
24251 Taiwan  
Phone: +886-2-8521-9986  
Fax: +886-2-8521-8935  
www.tungaloy.com/tw

## Tungaloy Cutting Tools (Thailand) Co.,Ltd.

Interlink tower 4th Fl.  
1858/5-7 Bangna-Trad Road  
km.5 Bangna, Bangna, Bangkok 10260  
Thailand  
Phone: +66-2-751-5711  
Fax: +66-2-751-5715  
www.tungaloy.com/th

## Tungaloy Singapore (Pte.), Ltd.

62 Ubi Road 1, #06-11 Oxley BizHub 2  
Singapore 408734  
Phone: +65-6391-1833  
Fax: +65-6299-4557  
www.tungaloy.com/sg

## Tungaloy Vietnam

LE04.38, Lexington Residence  
67 Mai Chi Tho St., Dist. 2,  
Ho Chi Minh City, Vietnam  
Phone: +84-2837406660  
www.tungaloy.com/sg

## Tungaloy India Pvt. Ltd.

Indiabulls Finance Centre,  
Unit # 902-A, 9th Floor,  
Tower 1, Senapati Bapat Marg,  
Elphinstone Road (West),  
Mumbai-400013, India  
Phone: +91-22-6124-8804  
Fax: +91-22-6124-8899  
www.tungaloy.com/in

## Tungaloy Korea Co., Ltd

#1312, Byucksan Digital Valley 5-cha  
Beotkkot-ro 244, Geumcheon-gu  
153-788 Seoul, Korea  
Phone: +82-2-2621-6161  
Fax: +82-2-6393-8952  
www.tungaloy.com/kr

## Tungaloy Malaysia Sdn Bhd

50 K-2, Kelana Mall, Jalan SS6/14  
Kelana Jaya, 47301  
Petaling Jaya, Selangor Darul Ehsan  
Malaysia  
Phone: +603-7805-3222  
Fax: +603-7804-8563  
www.tungaloy.com/my

## Tungaloy Australia Pty Ltd

Unit 68 1470 Ferntree Gully Road  
Knoxfield 3180 Victoria, Australia  
Phone: +61-3-9755-8147  
Fax: +61-3-9755-6070  
www.tungaloy.com/au

## PT. Tungaloy Indonesia

Kompleks Grand Wisata Block AA-10 No.3-5  
Cibitung  
Bekasi 17510, Indonesia  
Phone: +62-21-8261-5808  
Fax: +62-21-8261-5809  
www.tungaloy.com/id



www.tungaloy.com

follow us at:

facebook.com/tungaloyjapan  
twitter.com/tungaloyjapan  
www.youtube.com/tungaloycorporation

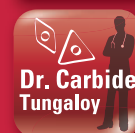


AS9100 Certified  
78006  
2015.11.04  
ISO14001 Certified  
EC97J1123  
1997.11.26

Distributed by:



FIND US ON THE CLOUD!  
machingcloud.com









# ISO ETURN

Tungaloy Report No. 426S2-G

## New grades and chipbreakers for this economical insert series





For more information

## Latest grades and chipbreakers for improved performance in all ISO applications

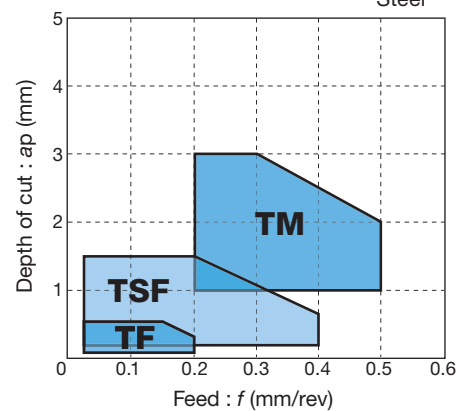
### GRADES & CHIPBREAKERS

#### **T9200 SERIES** (CVD) **PREMIUMTEC**

- T9205** : Good wear resistance
- T9215** : First choice for machining steel
- T9225** : Grade with a good balance of wear resistance and fracture toughness



Steel

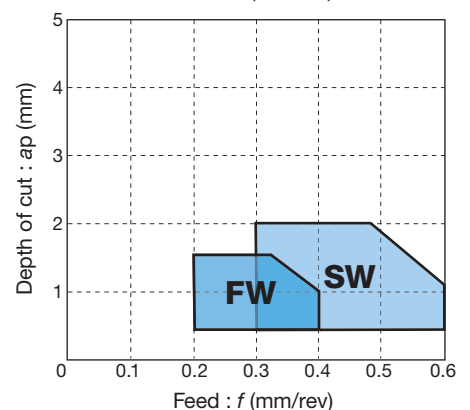
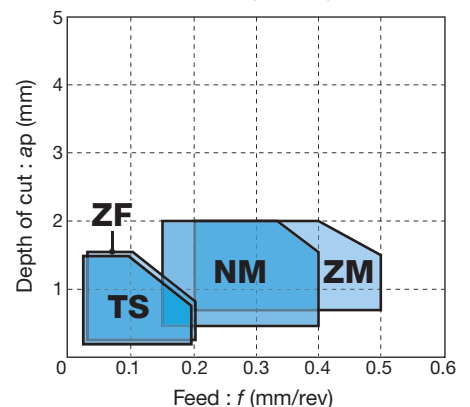


#### **NS9530** (Cermet)

#### **GT9530 / AT9530** (Coated cermet)

#### **PREMIUMTEC**

- NS9530** : Suitable for finishing to medium cutting of steel
- GT9530** : Provides stable tool life and excellent surface finish for finish machining of steel at high cutting speeds
- AT9530** : Outstanding wear resistance. First choice for machining alloy steel



## AH600 SERIES (PVD)

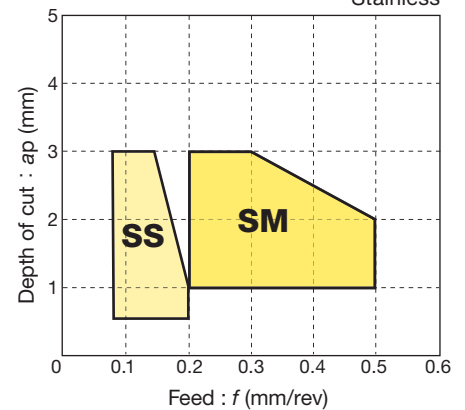
### PREMIUMTEC

**AH630** : Good resistance to wear and fracture in machining stainless steel at low to medium cutting speed

**AH645** : High fracture resistance in machining stainless steel



Stainless



## T6100 SERIES (CVD)

### PREMIUMTEC

**T6120** : Good wear resistance in continuous cutting at high speed

**T6130** : High wear resistance in cutting at medium to high speed

## T515 (CVD)

### PREMIUMTEC

**T515** : Good wear resistance even in high speed machining

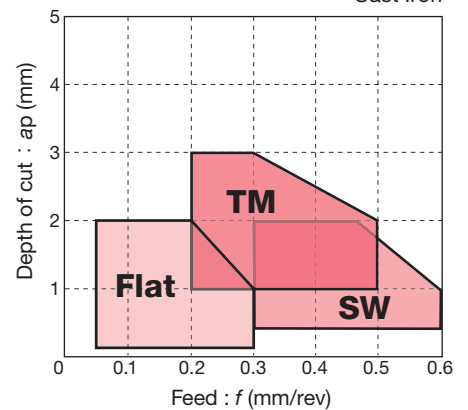
## T5100 SERIES (CVD)

### PREMIUMTEC

**T5115** : Stable machining in a wide range of applications from continuous to interrupted cutting



Cast Iron



## AH8000 SERIES (PVD)

### PREMIUMTEC

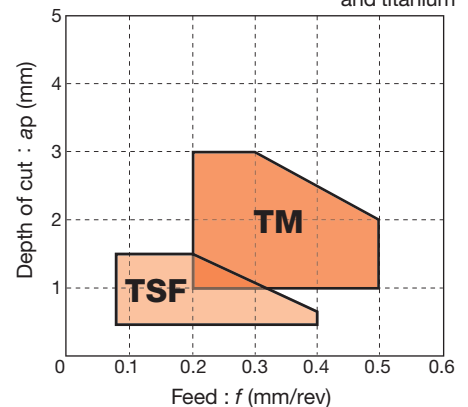
**AH8015** : Strong resistance to wear and built up edge



Stainless



Superalloys and titanium



## AH120 (PVD)

### PREMIUMTEC

**AH120** : Suitable for machining steel, stainless steel, cast iron and heat resistant alloys under general cutting conditions



Steel



Stainless



Cast Iron



Superalloys and titanium

## Insert NEGATIVE TYPE

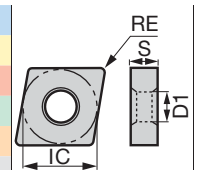
● : Continuous cutting  
 ● : Light interrupted cutting  
 ❖ : Heavy interrupted cutting

# CN



**Rhombic, 80°  
with hole**

P	Steel	●	●	●	❖	❖	❖	❖	❖	●	●							●	●	●		●	●	
M	Stainless		●	●		●	❖	❖	❖	●	●											●	●	
K	Cast iron	●	●	●						●	●							●	●	●				
N	Non-ferrous																							
S	Superalloys									●	●													
H	Hard materials																							



Application	Chipbreaker	Designation	Coated										Coated cermet		Cermet	Dimension (mm)				
			T9205	T9215	T9225	T6120	T6130	AH630	AH645	AH120	AH8015	T515	T5115	GT9530	AT9530	NS9530	RE	IC	S	D1
Precision finishing		CNMG090402E-TF	●	●												●	0.2	9.525	4.76	3.81
		CNMG090404E-TF	●	●												●	0.4	9.525	4.76	3.81
		CNMG090408E-TF	●	●												●	0.8	9.525	4.76	3.81
Finishing		CNMG090402E-TSF	●	●					●	●					●	●	0.2	9.525	4.76	3.81
		CNMG090404E-TSF	●	●					●	●					●	●	0.4	9.525	4.76	3.81
		CNMG090408E-TSF	●	●					●	●					●	●	0.8	9.525	4.76	3.81
Finishing		CNMG090402E-TS													●	●	0.2	9.525	4.76	3.81
		CNMG090404E-TS													●	●	0.4	9.525	4.76	3.81
		CNMG090408E-TS													●	●	0.8	9.525	4.76	3.81
Finishing (wiper)		CNMG090404E-FW	●	●	●									●		●	0.4	9.525	4.76	3.81
		CNMG090408E-FW	●	●	●									●		●	0.8	9.525	4.76	3.81
Finishing		CNMG090404E-ZF	●	●													0.4	9.525	4.76	3.81
		CNMG090408E-ZF	●	●														0.8	9.525	4.76
Finishing to medium cutting (wiper)		CNMG090408E-SW	●	●	●						●						0.8	9.525	4.76	3.81
		CNMG090412E-SW	●	●	●						●							1.2	9.525	4.76

\* Please contact our sales representative for your inquiries about the program adjustment when using SW/FW for machining of radius shape or taper machining.

● : New product  
 ● : Line up









## Insert NEGATIVE TYPE

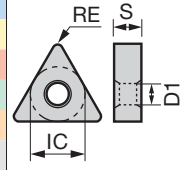
- : Continuous cutting
- ◐ : Light interrupted cutting
- ✱ : Heavy interrupted cutting

### TN



Triangular, 60°  
with hole

	P	M	K	N	S	H	T9205	T9215	T9225	T6120	T6130	AH630	AH645	AH120	AH8015	T515	T5115	GT9530	AT9530	NS9530	
Steel	●●●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●
Stainless	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●
Cast iron	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●
Non-ferrous	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●
Superalloys	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●
Hard materials	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●	●●●●●●



Application	Chipbreaker	Designation	Coated							Coated cermet		Cermet	Dimension (mm)									
			T9205	T9215	T9225	T6120	T6130	AH630	AH645	AH120	AH8015	T515	T5115	GT9530	AT9530	NS9530	RE	IC	S	D1		
Precision finishing		<b>TF</b> TNMG110402E-TF	●	●											●			0.2	6.35	4.76	2.26	
		TNMG110404E-TF	●	●												●			0.4	6.35	4.76	2.26
		TNMG110408E-TF	●	●												●			0.8	6.35	4.76	2.26
Finishing		<b>TSF</b> TNMG110402E-TSF	●	●											●		●	0.2	6.35	4.76	2.26	
		TNMG110404E-TSF	●	●										●	●	●		0.4	6.35	4.76	2.26	
		TNMG110408E-TSF	●	●										●	●	●		0.8	6.35	4.76	2.26	
Finishing (wiper)		<b>FW</b> TNMG110404E-FW	●															0.4	6.35	4.76	2.26	
		TNMG110408E-FW	●															0.8	6.35	4.76	2.26	
Finishing to medium cutting (wiper)		<b>SW</b> TNMG110408E-SW	●															0.8	6.35	4.76	2.26	
		TNMG110412E-SW	●															1.2	6.35	4.76	2.26	

\* Please contact our sales representative for your inquiries about the program adjustment when using SW/FW for machining of radius shape or taper machining.

- : New product
- : Line up

# Insert NEGATIVE TYPE

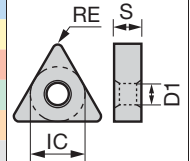
- : Continuous cutting
- ◐ : Light interrupted cutting
- ✱ : Heavy interrupted cutting

## TN



Triangular, 60° with hole

Material	T9205	T9215	T9225	T6120	T6130	AH630	AH645	AH120	AH8015	T515	T5115	GT9530	AT9530	NS9530	
P Steel	●	●	●	●	✱	✱	✱	●	●	●	●	●	●	●	●
M Stainless	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
K Cast iron	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
N Non-ferrous	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
S Superalloys	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
H Hard materials	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●



Application	Chipbreaker	Designation	Coated										Coated cermet		Cermet	Dimension (mm)				
			T9205	T9215	T9225	T6120	T6130	AH630	AH645	AH120	AH8015	T515	T5115	GT9530	AT9530	NS9530	RE	IC	S	D1
Finishing		<b>SS</b> TNMG110404E-SS						●	●							0.4	6.35	4.76	2.26	
		TNMG110408E-SS						●	●								0.8	6.35	4.76	2.26
Medium cutting		<b>TM</b> TNMG110404E-TM	●	●												0.4	6.35	4.76	2.26	
		TNMG110408E-TM	●	●													0.8	6.35	4.76	2.26
		TNMG110412E-TM	●	●													1.2	6.35	4.76	2.26
Medium cutting		<b>SM</b> TNMG110404E-SM				●	●	●								0.4	6.35	4.76	2.26	
		TNMG110408E-SM				●	●	●									0.8	6.35	4.76	2.26
Finishing to medium cutting		- TNMA110404E								●						0.4	6.35	4.76	2.26	
		TNMA110408E								●							0.8	6.35	4.76	2.26
		TNMA110412E								●							1.2	6.35	4.76	2.26

● : Line up

## Insert NEGATIVE TYPE

- : Continuous cutting
- ◐ : Light interrupted cutting
- ✱ : Heavy interrupted cutting

Application		Chipbreaker	Designation	Coated										Coated cermet		Cermet	Dimension (mm)					
				T9205	T9215	T9225	T6120	T6130	AH630	AH645	AH120	AH8015	T515	T5115	GT9530	AT9530	NS9530	RE	IC	S	D1	
Precision finishing		<b>TF</b>	<b>VNMG120402E-TF</b>	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	0.2	7.15	4.76	3.81
			<b>VNMG120404E-TF</b>	●	●													●	0.4	7.15	4.76	3.81
			<b>VNMG120408E-TF</b>	●	●													●	0.8	7.15	4.76	3.81
Finishing		<b>TSF</b>	<b>VNMG120402E-TSF</b>	●	●									●	●	●	●	0.2	7.15	4.76	3.81	
			<b>VNMG120404E-TSF</b>	●	●									●	●	●	●	0.4	7.15	4.76	3.81	
			<b>VNMG120408E-TSF</b>	●	●									●	●	●	●	0.8	7.15	4.76	3.81	
Finishing to medium cutting		<b>ZF</b>	<b>VNMG120404E-ZF</b>	●	●													0.4	7.15	4.76	3.81	
			<b>VNMG120408E-ZF</b>	●	●													0.8	7.15	4.76	3.81	
		<b>SS</b>	<b>VNMG120404E-SS</b>			●	●	●	●										0.4	7.15	4.76	3.81
		<b>VNMG120408E-SS</b>			●	●	●	●									0.8	7.15	4.76	3.81		
Medium cutting		<b>TM</b>	<b>VNMG120404E-TM</b>	●	●													0.4	7.15	4.76	3.81	
			<b>VNMG120408E-TM</b>	●	●													0.8	7.15	4.76	3.81	
			<b>VNMG120412E-TM</b>	●	●													1.2	7.15	4.76	3.81	
Finishing to medium cutting		<b>SM</b>	<b>VNMG120404E-SM</b>			●	●	●	●									0.4	7.15	4.76	3.81	
			<b>VNMG120408E-SM</b>			●	●	●	●									0.8	7.15	4.76	3.81	
		-	<b>VNMA120404E</b>								●								0.4	7.15	4.76	3.81
		<b>VNMA120408E</b>								●							0.8	7.15	4.76	3.81		

- : New product
- : Line up

# Insert NEGATIVE TYPE

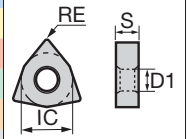
- : Continuous cutting
- ◐ : Light interrupted cutting
- ✱ : Heavy interrupted cutting

## WN



Trigon, 80°  
with hole

	P	M	K	N	S	H																	
Steel	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Stainless	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Cast iron	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Non-ferrous	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Superalloys	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Hard materials	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●



Application	Chipbreaker	Designation	Coated										Coated cermet		Cermet	Dimension (mm)				
			T9205	T9215	T9225	T6120	T6130	AH630	AH645	AH120	AH8015	T515	T5115	GT9530	AT9530	NS9530	RE	IC	S	D1
Precision finishing		<b>TF</b> WNMG060402E-TF	●	●												●	0.2	9.525	4.76	3.81
		WNMG060404E-TF	●	●												●	0.4	9.525	4.76	3.81
		WNMG060408E-TF	●	●												●	0.8	9.525	4.76	3.81
Finishing		<b>TSF</b> WNMG060402E-TSF	●	●					●	●				●	●	0.2	9.525	4.76	3.81	
		WNMG060404E-TSF	●	●					●	●				●	●	0.4	9.525	4.76	3.81	
		WNMG060408E-TSF	●	●					●	●				●	●	0.8	9.525	4.76	3.81	
		WNMG060412E-TSF	●	●					●	●				●	●	1.2	9.525	4.76	3.81	
Finishing		<b>TS</b> WNMG060402E-TS												●	●	0.2	9.525	4.76	3.81	
		WNMG060404E-TS												●	●	0.4	9.525	4.76	3.81	
		WNMG060408E-TS												●	●	0.8	9.525	4.76	3.81	
Finishing (wiper)		<b>FW</b> WNMG060404E-FW	●	●	●								●	●	0.4	9.525	4.76	3.81		
		WNMG060408E-FW	●	●	●								●	●	0.8	9.525	4.76	3.81		
Finishing		<b>ZF</b> WNMG060404E-ZF	●	●											0.4	9.525	4.76	3.81		
		WNMG060408E-ZF	●	●											0.8	9.525	4.76	3.81		
Finishing to medium cutting (wiper)		<b>SW</b> WNMG060408E-SW	●	●	●						●				0.8	9.525	4.76	3.81		
		WNMG060412E-SW	●	●	●						●				1.2	9.525	4.76	3.81		
Finishing		<b>SS</b> WNMG060404E-SS						●	●						0.4	9.525	4.76	3.81		
		WNMG060408E-SS						●	●						0.8	9.525	4.76	3.81		
		WNMG060412E-SS						●	●						1.2	9.525	4.76	3.81		

\* Please contact our sales representative for your inquiries about the program adjustment when using SW/FW for machining of radius shape or taper machining.

- : New product
- : Line up

# Insert NEGATIVE TYPE

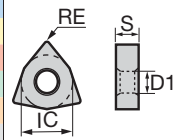
- : Continuous cutting
- ◐ : Light interrupted cutting
- ✱ : Heavy interrupted cutting

# WN



**Trigon, 80° with hole**

Material	P	M	K	N	S	H	T9205	T9215	T9225	T6120	T6130	AH630	AH645	AH120	AH8015	T515	T5115	GT9530	AT9530	NS9530
Steel	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Stainless	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Cast iron	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Non-ferrous	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Superalloys	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Hard materials	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●



Application	Chipbreaker	Designation	Coated										Coated cermet		Cermet	Dimension (mm)								
			T9205	T9215	T9225	T6120	T6130	AH630	AH645	AH120	AH8015	T515	T5115	GT9530	AT9530	NS9530	RE	IC	S	D1				
Medium cutting		<b>TM</b> WNMG060404E-TM	●	●																	0.4	9.525	4.76	3.81
		WNMG060408E-TM	●	●																	0.8	9.525	4.76	3.81
		WNMG060412E-TM	●	●																	1.2	9.525	4.76	3.81
Finishing to medium cutting		<b>NM</b> WNMG060412E-NM			●																1.2	9.525	4.76	3.81
		<b>ZM</b> WNMG060408E-ZM	●	●																	0.8	9.525	4.76	3.81
			WNMG060412E-ZM	●	●																	1.2	9.525	4.76
Medium cutting		<b>SM</b> WNMG060404E-SM				●	●	●													0.4	9.525	4.76	3.81
		WNMG060408E-SM				●	●	●													0.8	9.525	4.76	3.81
		WNMG060412E-SM				●	●	●													1.2	9.525	4.76	3.81
Finishing to medium cutting		- WNMA060404E														●					0.4	9.525	4.76	3.81
		WNMA060408E														●					0.8	9.525	4.76	3.81
		WNMA060412E														●					1.2	9.525	4.76	3.81
		WNMA060416E														●					1.6	9.525	4.76	3.81

● : New product  
● : Line up



[www.tungaloy.com](http://www.tungaloy.com)  
 follow us at:  
[facebook.com/tungaloyjapan](https://facebook.com/tungaloyjapan)  
[twitter.com/tungaloyjapan](https://twitter.com/tungaloyjapan)  
[www.youtube.com/tungaloycorporation](https://www.youtube.com/tungaloycorporation)



AS9100 Certified  
 78006  
 2015.11.04  
 ISO 14001 Certified  
 EC97J1123  
 1997.11.26

Distributed by:



FIND US ON THE CLOUD!  
[machiningcloud.com](http://machiningcloud.com)









# ISO ETURN

Tungaloy Report No. 426S3-G

## Introducing GNMG and FNMG inserts



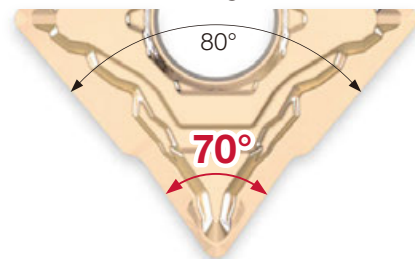


## New **GNMG** and **FNMG** insert shapes for **ISO-EcoTurn**, an economical insert series

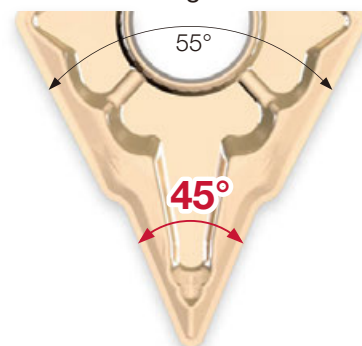
### Innovative insert designs with reduced corner angles for better chip control and machining stability

- **GNMG0904** insert with **70° corners**: good alternative to CNMG with 80° corners
- **FNMG1104** insert with **45° corners**: good alternative to DNMG with 55° corners
- 70° and 45° corner angles provide the inserts with larger clearances with the workpiece
- Better chip control and chip flow generated by larger clearances of the insert side and end eliminate part damage. In addition, reduced corner angles help reduce the radial force that acts on the insert during machining, eliminating chatter, while providing stability

**New GNMG** type  
Corner angle: **70°**

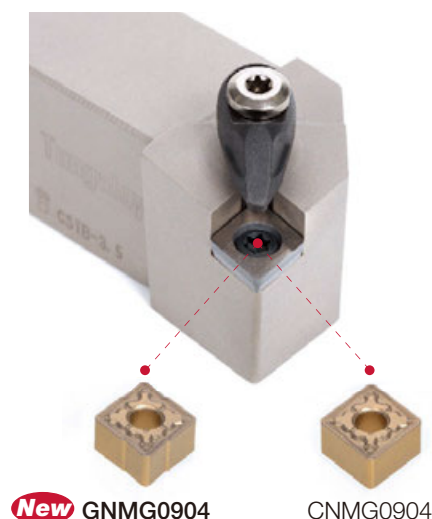


**New FNMG** type  
Corner angle: **45°**



### Versatility and economy

- The new inserts can be used with existing **ISO-EcoTurn** toolholders for CNMG0904 or DNMG1104
- **ISO-EcoTurn** decreases cost per insert on the production line without compromising insert performance
- Three types of insert grades are available for machining of a wide range of materials



**New GNMG0904**

CNMG0904

## CUTTING PERFORMANCE

### 1. Excellent chip control during profiling (longitudinal turning and outward face turning)



**New FNMG** type  
Corner angle: 45°

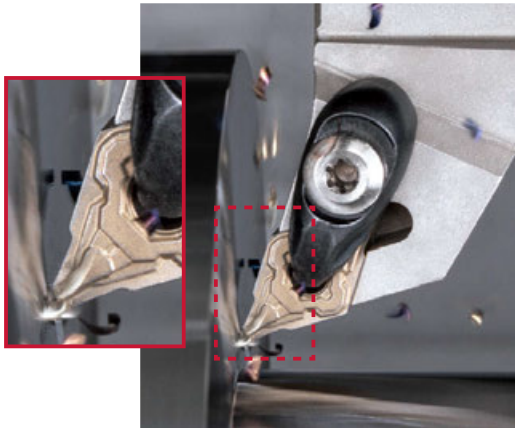
**GNMG** and **FNMG** inserts provide larger clearances for low cutting force and excellent chip control during profile machining.



**DNMG** type  
Corner angle: 55°

<b>P</b>	Toolholder	: ADJNL2525M1104-A
	Insert	: <b>FNMG110404E-TSF T9215</b> DNMG110404E-TSF T9215
	Workpiece material	: SCM440 / 42CrMo4
	Cutting speed	: ① $V_c = 250$ m/min, ② $V_c = 150$ m/min
	Feed	: ① $f = 0.3$ mm/rev, ② $f = 0.25$ mm/rev
	Depth of cut	: ① $a_p = 0.5$ mm, ② $a_p = 0.25$ mm
	Machining	: ① External turning, ② Face turning
	Coolant	: Dry

### 2. Excellent chip evacuation during face turning



**New FNMG** type  
Corner angle: 45°

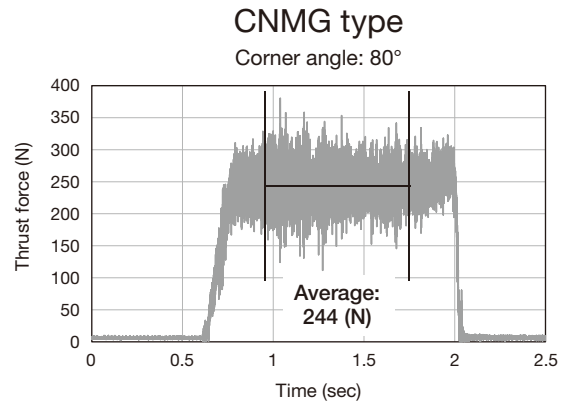
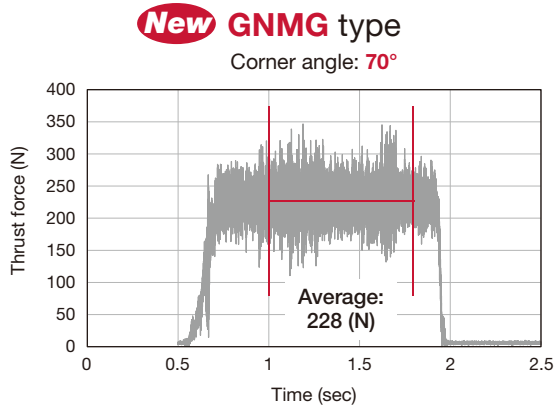
**GNMG** and **FNMG** inserts provide larger clearances for the chips to smoothly flow and evacuate out of the cutting zone. This significantly reduces chip re-cutting when the insert is fed in any direction.



**DNMG** type  
Corner angle: 55°

<b>P</b>	Toolholder	: ADQNL2525M1104-A
	Insert	: <b>FNMG110404E-TSF T9215</b> DNMG110404E-TSF T9215
	Workpiece material	: SCM440 / 42CrMo4
	Cutting speed	: $V_c = 150$ m/min
	Feed	: $f = 0.25$ mm/rev
	Depth of cut	: $a_p = 0.25$ mm
	Machining	: Face turning
	Coolant	: Dry

### 3. Cutting force (thrust force)



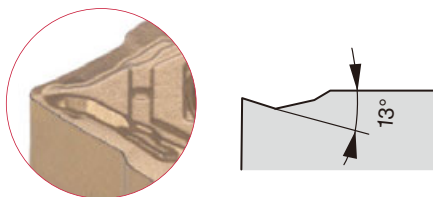
Reduced corner angles of **GNMG** and **FNMG** inserts enable less cutting contact with the workpiece. This lowers the radial cutting force that applies on the insert during machining, eliminating chatter, while improving machining stability.

<b>P</b>	Toolholder	: ACLNL2525M0904-A
	Insert	: <b>GNMG090408E-TM</b> T9215 CNMG090408E-TM T9215
	Workpiece material	: SCM440 / 42CrMo4
	Cutting speed	: $V_c = 300$ m/min
	Feed	: $f = 0.2$ mm/rev
	Depth of cut	: $a_p = 3$ mm
	Machining	: External turning
	Coolant	: Dry

### APPLICATION AREA

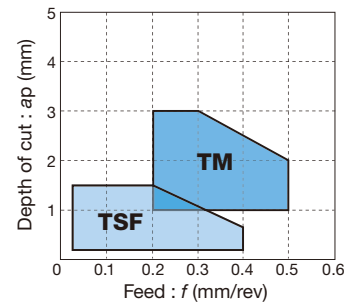
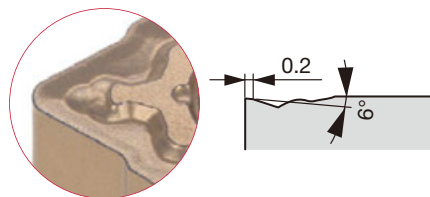
#### TSF chipbreaker

Excellent chip control and low cutting force geometry for finish machining.



#### TM chipbreaker

Excellent chip control and stable machining for medium machining.



### GRADES

Grade	Recommended workpiece material	Feature
<b>PREMIUMTEC</b> <b>T9215</b>	<b>P M K</b>	<ul style="list-style-type: none"> <li>- Well-balanced between wear and chipping resistance</li> <li>- First choice for steel</li> <li>- High versatility for a wide range of applications</li> </ul>
<b>PREMIUMTEC</b> <b>T9225</b>	<b>P</b>	<ul style="list-style-type: none"> <li>- First choice for roughing to medium cutting</li> <li>- High fracture resistance</li> </ul>
<b>PREMIUMTEC</b> <b>AH8015</b>	<b>P M K S</b>	<ul style="list-style-type: none"> <li>- PVD coated grade with a balanced resistance to wear and fracture</li> <li>- First choice for stainless steel and heat-resistant superalloys</li> </ul>



## STANDARD CUTTING CONDITIONS

ISO	Operation	Chipbreaker	Grade	Depth of cut ap (mm)	Feed f (mm/rev)	Cutting speed: Vc (m/min)		
						Low carbon steel, alloy steel	Medium carbon steel, alloy steel	High carbon steel, alloy steel
<b>P</b>	Finishing	<b>TSF</b>	T9215	0.2 - 1.5	0.08 - 0.4	150 - 400	150 - 400	120 - 300
			T9225	0.2 - 1.5	0.08 - 0.4	120 - 300	120 - 300	100 - 250
	Medium cutting	<b>TM</b>	T9215	1 - 3	0.2 - 0.5	150 - 400	150 - 400	120 - 300
			T9225	1 - 3	0.2 - 0.5	120 - 300	120 - 300	100 - 250
<b>Stainless steel</b>								
<b>M</b>	Finishing	<b>TSF</b>	T9215	0.2 - 1.5	0.08 - 0.4		100 - 250	
			T9225	0.2 - 1.5	0.08 - 0.4		100 - 250	
			AH8015	0.2 - 1.5	0.08 - 0.4		90 - 190	
	Medium cutting	<b>TM</b>	T9215	1 - 3	0.2 - 0.5		100 - 250	
			T9225	1 - 3	0.2 - 0.5		100 - 250	
			AH8015	1 - 3	0.2 - 0.5		90 - 190	
<b>Cast iron</b>								
<b>K</b>	Finishing	<b>TSF</b>	T9215	0.2 - 1.5	0.08 - 0.4		140 - 500	
			T9225	0.2 - 1.5	0.08 - 0.4		140 - 500	
	Medium cutting	<b>TM</b>	T9215	1 - 3	0.2 - 0.5		140 - 500	
			T9225	1 - 3	0.2 - 0.5		140 - 500	
<b>Heat-resistant alloys</b>								
<b>S</b>	Finishing	<b>TSF</b>	AH8015	0.2 - 1.5	0.08 - 0.4		20 - 80	
	Medium cutting	<b>TM</b>	AH8015	1 - 3	0.2 - 0.5		20 - 80	



## Tungaloy Corporation (Head office)

11-1 Yoshima-Kogyodanchi  
Iwaki-city, Fukushima 970-1144 Japan  
Phone: +81-246-36-8501  
Fax: +81-246-36-8542  
www.tungaloy.co.jp

## Tungaloy America, Inc.

3726 N Ventura Drive  
Arlington Heights, IL 60004, U.S.A.  
Phone: +1-888-554-8394  
Fax: +1-888-554-8392  
www.tungaloy.com/us

## Tungaloy Canada

432 Elgin St. Unit 3  
Brantford, Ontario N3S 7P7, Canada  
Phone: +1-519-758-5779  
Fax: +1-519-758-5791  
www.tungaloy.com/ca

## Tungaloy de Mexico S.A.

C. Los Arellano 113,  
Parque Industrial Siglo XXI  
Aguascalientes, AGS, Mexico 20290  
Phone: +52-449-929-5410  
Fax: +52-449-929-5411  
www.tungaloy.com/mx

## Tungaloy do Brasil Ltda.

Avd. Independencia N4158 Residencial Flora  
13280-000 Vinhedo, São Paulo, Brasil  
Phone: +55-19-38262757  
Fax: +55-19-38262757  
www.tungaloy.com/br

## Tungaloy Germany GmbH

An der Alten Ziegelei 1  
D-40789 Monheim, Germany  
Phone: +49-2173-90420-0  
Fax: +49-2173-90420-19  
www.tungaloy.com/de

## Tungaloy France S.A.S.

ZA Courtaboeuf - Le Rio  
1 rue de la Terre de feu  
F-91952 Courtaboeuf Cedex, France  
Phone: +33-1-6486-4300  
Fax: +33-1-6907-7817  
www.tungaloy.com/fr

## Tungaloy Italia S.r.l.

Via E. Andolfato 10  
I-20126 Milano, Italy  
Phone: +39-02-252012-1  
Fax: +39-02-252012-65  
www.tungaloy.com/it

## Tungaloy Czech s.r.o.

Turanka 115  
CZ-627 00 Brno, Czech Republic  
Phone: +420-532 123 391  
Fax: +420-532 123 392  
www.tungaloy.com/cz

## Tungaloy Ibérica S.L.

C/Miquel Servet, 43B, Nau 7  
Pol. Ind. Bufalvent  
ES-08243 Manresa (BCN), Spain  
Phone: +34 93 113 1360  
Fax: +34 93 876 2798  
www.tungaloy.com/es

## Tungaloy Scandinavia AB

Bultgatan 38  
442 40 Kungälv, Sweden  
Phone: +46-462119200  
Fax: +46-462119207  
www.tungaloy.com/se

## Tungaloy Rus, LLC

Andropova avenue, h.18/7,  
11 floor, office 3, 115432,  
Moscow, Russia  
Phone: +7-499-683-01-80  
Fax: +7-499-683-01-81  
www.tungaloy.com/ru

## Tungaloy Polska Sp. z o.o.

Ul. Irysowa 1, 55-040 Bielany  
Wroclawskie, Poland  
Phone: +48 607 907 237  
www.tungaloy.com/pl

## Tungaloy U.K. Ltd

Gallan Park, Watling Street,  
Cannock, WS110XG, UK  
Phone: +44 121 4000 231  
Fax: +44 121 270 9694  
www.tungaloy.com/uk

## Tungaloy Hungary Kft

Erzsébet királyné útja 125  
H-1142 Budapest, Hungary  
Phone: +36 1 781-6846  
Fax: +36 1 781-6866  
www.tungaloy.com/hu

## Tungaloy Turkey

Serifali Mah.bayraktar Bulvari Kule Sk. No:26  
34775 Umraniye / Istanbul / Turkey  
Phone: +90 216 540 04 67  
Fax: +90 216 540 04 87  
www.tungaloy.com/tr

## Tungaloy Benelux b.v.

Tjalk 70  
NL-2411 NZ Bodegraven, Netherlands  
Phone: +31 172 630 420  
Fax: +31 172 630 429  
www.tungaloy.com/nl

## Tungaloy Croatia

Ulica bana Josipa Jelačića 87,  
10430, Samobor, Croatia  
Phone: +385 1 3326 604  
Fax: +385 1 3327 683  
www.tungaloy.com/hr

## Tungaloy Cutting Tool (Shanghai) Co.,Ltd.

Rm No 401 No.88 Zhabei  
Jiangchang No.3 Rd  
Shanghai 200436, China  
Phone: +86-21-3632-1880  
Fax: +86-21-3621-1918  
www.tungaloy.com/cn

## Tungaloy Cutting Tools (Taiwan) Co.,Ltd.

9F. No.293, Zhongyang Rd,  
Xinzhuan Dist, New Taipei City,  
24251 Taiwan  
Phone: +886-2-8521-9986  
Fax: +886-2-8521-8935  
www.tungaloy.com/tw

## Tungaloy Cutting Tools (Thailand) Co.,Ltd.

Interlink tower 4th Fl.  
1858/5-7 Bangna-Trad Road  
km.5 Bangna, Bangna, Bangkok 10260  
Thailand  
Phone: +66-2-751-5711  
Fax: +66-2-751-5715  
www.tungaloy.com/th

## Tungaloy Singapore (Pte.), Ltd.

62 Ubi Road 1, #06-11 Oxley BizHub 2  
Singapore 408734  
Phone: +65-6391-1833  
Fax: +65-6299-4557  
www.tungaloy.com/sg

## Tungaloy Vietnam

LE04.38, Lexington Residence  
67 Mai Chi Tho St., Dist. 2,  
Ho Chi Minh City, Vietnam  
Phone: +84-2837406660  
www.tungaloy.com/sg

## Tungaloy India Pvt. Ltd.

Indiabulls Finance Centre,  
Unit # 902-A, 9th Floor,  
Tower 1, Senapati Bapat Marg,  
Elphinstone Road (West),  
Mumbai-400013, India  
Phone: +91-22-6124-8804  
Fax: +91-22-6124-8899  
www.tungaloy.com/in

## Tungaloy Korea Co., Ltd

#1312, Byucksan Digital Valley 5-cha  
Beotkkot-ro 244, Geumcheon-gu  
153-788 Seoul, Korea  
Phone: +82-2-2621-6161  
Fax: +82-2-6393-8952  
www.tungaloy.com/kr

## Tungaloy Malaysia Sdn Bhd

50 K-2, Kelana Mall, Jalan SS6/14  
Kelana Jaya, 47301  
Petaling Jaya, Selangor Darul Ehsan  
Malaysia  
Phone: +603-7805-3222  
Fax: +603-7804-8563  
www.tungaloy.com/my

## Tungaloy Australia Pty Ltd

Unit 68 1470 Ferntree Gully Road  
Knoxfield 3180 Victoria, Australia  
Phone: +61-3-9755-8147  
Fax: +61-3-9755-6070  
www.tungaloy.com/au

## PT. Tungaloy Indonesia

Kompleks Grand Wisata Block AA-10 No.3-5  
Cibitung  
Bekasi 17510, Indonesia  
Phone: +62-21-8261-5808  
Fax: +62-21-8261-5809  
www.tungaloy.com/id



www.tungaloy.com

follow us at:

facebook.com/tungaloyjapan  
twitter.com/tungaloyjapan  
www.youtube.com/tungaloycorporation



AS9100 Certified  
78006  
2015.11.04  
ISO 14001 Certified  
EC97J1123  
1997.11.26

Distributed by:



FIND US ON THE CLOUD!  
machingcloud.com

